



Today's Farm

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

Dairying in Croatia 7

Making money from the 'fifth quarter'.	10
Social media in action.	12
Choosing a ram.	14
Green light for protein.	16
Recording data, cutting costs.	19
Profiting from pig slurry.	27
Pests in equines.	30
Forestry, Botanic Gardens and more...	



We'll still be here for Irish farming when it's his turn to fill your boots

We've grown up with Irish farmers. With over 40 years working in the business, we know them personally and professionally. We've been there through the highs and lows and will continue to help farmers grow for decades to come.

We're also committed to fostering the next generation of Irish farmers with initiatives such as:

- The Paddy O'Keeffe Innovation Centre at Teagasc Moorepark
- FBD & Irish Farmers Journal UN Year of Family Farming Awards
 - FBD Young Farmer of the Year
 - FBD Women & Agricultural Conference

Give us a call and we'll drop out to give you in-depth expert advice.

Call 1890 617 617

Visit www.fbd.ie



Calls will be recorded for training and verification purposes.
FBD Insurance plc is regulated by the Central Bank of Ireland.



4 Etc
5 Upcoming events

Overseas

7 Dairying in Croatia

Drystock

10 Making money from the "fifth quarter"
12 Social media in action
14 Choosing a ram

Dairying

16 Green light for protein
19 Recording data, cutting costs

Tillage

22 Crop planning

Farm management

24 Registered partnerships

26 Making a plan

Fertilizer

27 Profiting from pig slurry

Equine husbandry

30 Controlling internal pests

Environment

32 Cross compliance

Health and safety

34 Why you should be extra careful in July

Forestry

36 The crucial early years

Botanic gardens

38 Transplanting is a testing time

COMMENT



Mark Moore
Editor,
Today's Farm

The faraway hills....

Croatia and Ireland have much in common. The population size of 4.8 million in Ireland and 4.3 million in Croatia is similar, and the land area is comparable. In terms of dairy farming, relatively dry Mediterranean/continental Croatia is far behind us, however.

The country has opted for dual-purpose Simmentals who are housed in barns all year round as are cows on most continental farms. Permanent pasture is rare and the animals don't enjoy the welfare benefits of simply walking around in the open air.

The Croats suffer from an almost insuperable land ownership challenge. An average farm consists of 15 plots and extends to just 5ha. We are gradually finding solutions to our own much less severe structural issues – see Tom Curran's article on pages 24-25.

The Croats are educated, friendly people, and there are many excellent farmers there, but if you are looking for an emerging competitor to our dairy sector, you should probably look elsewhere.

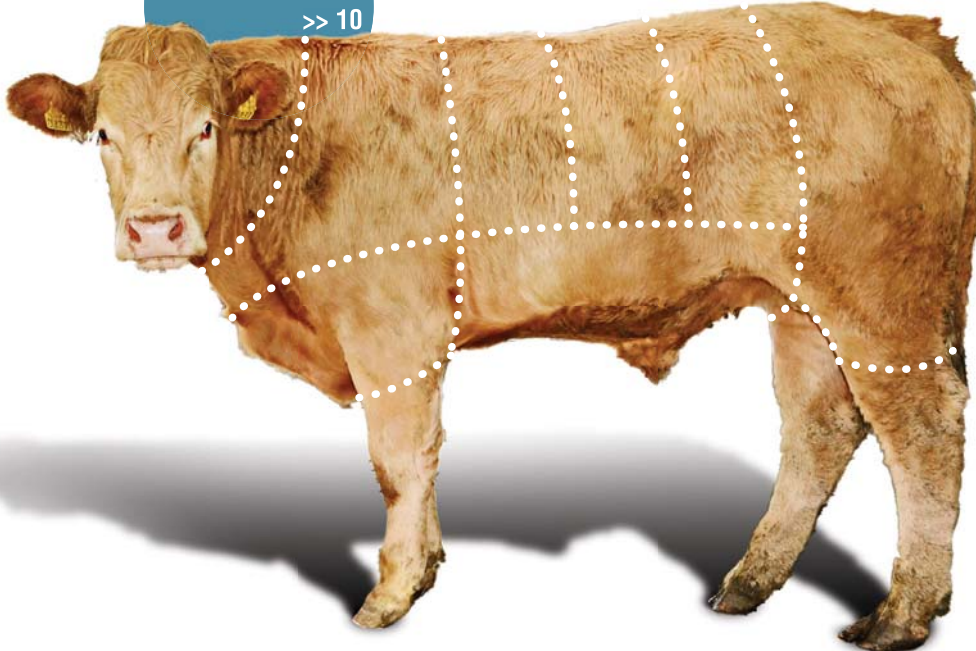
Is glas iad na cnoic

Is iomaí rud atá i gcoitinne idir an Chróit agus Éire. Is comhchosúil méid an daonra – 4.8 milliún in Éirinn, 4.3 milliún sa Chróit agus is comhchosúil an t-achar talún chomh maith. I dtéarmaí na feirmeoireachta déiríochta, tá tír Mheánmhara na Cróite, atá measartha tirim, i bhfad laistiar dúinn. Tá an tír tugtha d'eallach dhá fheidhm Simmenthal a gcoimeádtar i sciobóil ó cheann ceann na bliana faoi mar a dhéantar le ba ar fhorhmór na bhfeirmeacha ilchríche Is annamh an féarach buan.

Tá na Crótaigh buailte le dúshlán i dtaca le húnéireacht feirme atá nach mór dodhéanta a shárú. Cui-msíonn an ghnáthfheirm 15 plásóg agus gan ann ach cúig heicteár. Is daoine oilte, cairdiúla iad na Crótaigh ach má táthar sa tóir ar iomaitheoir éiritheach dár n-earnáil déiríochta gach seans gur cheart a leithéid a lorg in áit éigin eile.

Add value to cattle

>> 10



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

Editor: Mark Moore | Editorial team: Alison Maloney, Joanne Carroll & Eric Donald
Group production editor: Garrett Allen
Sub-editors: Regina Horan & Brian Murphy
Cover design: Design at DBA | Imaging: Owen McGauley
Printing: Boylan Print Group, Drogheda, Co Louth | Advertising: Frank McGouran
All Media Matters (01) 4941071 086-8111567 sales@allmediamatters.com

All editorial enquiries to: Teagasc, Oak Park, Carlow
Tel: (059) 9170200 Fax: (059) 9183498
e-mail: mark.moore@teagasc.ie | web: www.teagasc.ie

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

Cover | The dual-purpose Simmental is the most common dairy breed in Croatia. These gentle, easy-going cows are in barns all-year-round living on silage or hay and concentrates.

Picture: Mark Moore



Over 8,000 people attended Beef 2014 at Grange, Co Meath.

Good turnout for Beef 2014

Beef 2014, the open day at the Teagasc research centre at Grange, Co Meath on 18 June, attracted a large attendance estimated at over 8,000. There was good interaction from those attending with the Teagasc research, advisory and education staff available on the stands on the day and with those from other organisations who joined with Teagasc to stage the event.

The Minister of State at the Department of Agriculture, Food and the Marine Tom Hayes attended and officially launched a new "Call to Action" poster for farm safety, and launched a "My Farm, My Plan" planning workbook, which is available to farmers to assist them in planning their businesses.

The use of the 'village' concept to group expertise in different areas such as animal health, business planning, BETTER Farm programme and environment allowed detailed one-to-one discussions to take place.

Grouping all the breed societies and ICBF under a common animal breeding exhibit was also a significant step forward. The discussion forum at the end of the event heard from six farmers who outlined their businesses and their plans to develop their beef operations. Concerns about the current low profitability in the sector and the change in market specifications were also discussed at the forum. The event was sponsored by FBD Trust.

Irish rugby team has exceptional guts

Scientists at the Science Foundation Ireland-funded Alimentary Pharmabiotic Centre (APC) at University College Cork and Teagasc Food Research Centre, Moorepark, have carried out a study in conjunction with the Irish Rugby Football Union, which has revealed that exercise and associated dietary changes influence gut microbial diversity.

The importance of our gut microbes to health and defence against disease is becoming more apparent. In particular, high microbial diversity has been associated with increased health whereas a low diversity of gut microbes has been associated with several diseases and syndromes, including obesity.

To investigate the impact of exercise and diet, scientists at the Alimentary Pharmabiotic Centre studied a group of "elite" athletes – the Irish rugby football team. The study was carried out with 40 male elite professional rugby players prior to the last rugby world cup. This study highlighted that the gut microbiota of our national rugby team had a very high diversity relative to the Irish general public.

The athletes are an exceptional group in terms of their dietary intake, fitness/endurance and, now we know, in relation to their gut microbiota! This high diversity is particularly linked with exercise and protein consumption and suggests that eating specific proteins and/or exercise can provide a means of increasing microbial diversity in the gut.

BOOK REVIEW

The Man Who Plants Trees

By Jim Robbins

David Milarch, a Michigan nurseryman with a penchant for hard living, had a visionary experience that convinced him the earth was in trouble and that

trees were dying. In Colorado, for example, the mature lodgepole pines have been nearly wiped out and, in 2005, aspens began dying in large numbers; 30,000 acres perished that year.

Milarch set about cloning the champion trees of the world and although tree experts said it was impossible they were proved wrong when – 20 years later – Milarch and colleagues could point to cloned trees of the world's most resilient species, including giant redwoods and sequoias.

This book tells the story of Milarch's work and his success in creating a botanical Noah's Ark. It will appeal to readers with an interest in the world of trees and the story carries a message of hope for the future.

– Sean Sheehan

The Man Who Plants Trees costs €10.16 from *The Book Depository* (www.bookdepository.co.uk). Price include postage to Ireland.



A Teagasc/Irish Farmers Journal BETTER Farm walk will take place on the farm of Tom Halpin, Robertstown, Co Meath, on 9 July.

BETTER FARM BEEF EVENT

Two of the farms in the Teagasc/*Irish Farmers Journal* BETTER Farm beef programme will hold farm walks in July. The first is on the farm of Tom Halpin, Robertstown, Co Meath on 9 July. The second walk takes place on 24 July on the farm of Mike Dillane, Lixnaw, Co Kerry.

ENERGY USE COURSES

Teagasc and Sustainable Energy Authority of Ireland (SEAI) are organising courses on energy use in various agricultural sectors. The two-day courses introduce concepts of on-farm energy conservation and efficiency. Farm energy conservation and efficiency should be a starting point for reducing the demand

for energy resources used in agricultural production.

Two two-day courses will take place in each of three enterprises – dairying, mushroom units and protected crop units. These are taking place during July.

SHEEP EVENTS

A summer series of Teagasc sheep events for farmers starts on 8 July with a farm walk on the farm of John Doyle, Ballindaggin, Bunclody, Co Wexford. This farmer is a participant in the Teagasc BETTER Farm sheep programme. The event starts at 11am. Seven events will take place between now and 11 September at different locations around the country. The first event is open to all but three of the seven events are only for farmer discussion groups participating in

STAP and pre-booking is required.

ORGANIC DEMO FARM WALKS

Teagasc has teamed up with the Department of Agriculture, Food and the Marine and the organic organisations to organise a series of organic demonstration farm walks around the country. The 12 events begin on Thursday 17 July on the farm of Oliver Dixon near Claremorris, Co Mayo. This series of walks runs for a longer period than in previous years, continuing until the final event on Wednesday, 25 March, 2015 on the farm of Mark Gillanders in Monaghan.

During the series, the events will take place on farms with beef, cereals, sheep, horticulture, poultry and dairy enterprises and also on farms who are direct selling to consumers.

TEAGASC MANUAL ON DRAINAGE - and Soil Management

Price €40,
or €20 for
Teagasc
clients



A Best Practice Manual
for Ireland's Farmers



AVAILABLE AT TEAGASC OFFICES



Kristijan Pandek's recently built barn is bright and airy. A concentrate feeding unit is visible in blue to the right in the picture.

Cows in Croatia

Milk producers in the EU's newest member are energetic and entrepreneurial but they are hampered by the structure of land holdings

Story & pictures: Mark Moore

Irish eyes do a double-take when first confronted with Croatian dairy cows. Simmental is the breed of choice and these red and white, big-framed, good-natured animals with huge, noble heads seem different from our concept of the ideal dairy cow. Austria, Germany and Switzerland were the source of many of the Simmentals, which arrived in Croatia in the 1990s.

The breed gradually replaced the low genetic merit cows which had been farmed when communism held sway. A dual-purpose breed seems to work well in continental countries, where levels of rainfall are well below those in Ireland and cattle are housed year-round.

Some of the in-coming animals were part of aid schemes. Foreign donors aimed to assist Croatian farmers who had to deal with the ending of communism and the several wars between the member states of former Yugoslavia. Large swathes of land in the east of the country are still minefields, though relations with Serbia and other neighbours are now entirely peaceful.

Kristijan Pandek is a young dairy farmer, who sends the milk from his red-and-whites to a processor in nearby Zagreb, the capital of Croatia and home to 750,000. The milk is sold as liquid milk, or processed into yoghurt and cheese.

Croatia joined the EU earlier this year and Kristijan enjoys a €200/ha area payment but, also, a small subsidy on each litre of milk produced – a legacy of earlier direct government support, which will be gradually phased out. He owns 25ha and rents another 175ha from the government on a 30-year lease at €50/ha per year.

"I have about 120ha of grain, 30ha of oil crops and 40ha of alfalfa/ryegrass," says Kristijan. "There are no fields of permanent grass on the farm."

Wages for his five workers are not much more than €400 per month – modest when you consider petrol prices are similar to Ireland. A small apartment built into the barn is occupied by a farm employee.

Cows are kept indoors in a large, newly-built barn, constructed with the benefit of a 50% government grant. The docile Simmentals don't seem unduly concerned by their year-round housing but signs of boredom are noticeable. Exposed wood is usually heavily chewed, for example.

Yield problems

Kristijan is unhappy with his cows' milk yield; many produce less than 5,000 litres. With the 123 cows calving all year round, heat detection is not easy and while the lactation might be only 250 days the calving interval has stretched to 420.

» Continued on next page

COMPARISON



Croatia

Population:
4.3m

Land area:
56,000km²

Life expectancy:
76.4

GDP/hd:
€10,700



Ireland

Population:
4.8m

Land area:
70,000km²

Life expectancy:
80.5

GDP/hd:
€25,000

» From page 7

Kristijan is optimistic that a new vet and AI technician will help improve the situation. Feeding is also a problem. Torrential rain in spring led to serious flooding in some areas of Croatia and poor quality silage.

“Our silage was made 20 days later than we intended and the quality has been poor as a result,” says Kristijan. The silage is made in round bales from alfalfa and ryegrass. Pit silage would be cheaper and probably better quality but there are no silage contractors in the area.

“Getting quality fodder for the cows is the biggest problem,” says Damir Pejakovic, Kristijan’s agricultural adviser. The advisory service is based on a county structure and is largely free to the farmer. “Farmers have no problem growing maize – yields can reach 20t of DM/ha – or cereals with which to fatten bulls but good quality fodder is hard to produce.”

Poor fodder quality is responsible for the rapid decline in milk yield from the cows. A cow’s milk yield typically peaks at about 40l/day but this falls quickly as the lactation progresses. Cows consume over two tonnes of concentrates from feeder units which release meal according to the cow’s stage of pregnancy. Transponders round the cow’s neck identify her to the unit. Breakeven for Kristijan is 35c/l and his current price 40c/l.

Breed choice

Questioned as to whether he would abandon his dual-purpose Simmentals in favour of a more specifically dairy breed Kristijan points out that



A flat on the first floor of Kristijan’s barn is occupied by a stock man.

his animals have the genetic potential to yield 8,000 to 10,000 litres and still produce a decent calf. Optimistic about the future of dairying, he keeps all of his heifers while fattening the bulls for slaughter at 14 to 15 months.

The large size of Kristijan Pandek’s business is unusual in Croatia. As many as 122,000 farms are less than

two hectares; 85,000 are less than 10ha and only 3,000 are larger than 30ha. The average farm is made up of 15 plots. Hedges are absent and the land is divided into strips and parcels with no fencing in between. Owners closely monitor exactly who owns what of course.

Croatia’s tiny farms are a relic of the way Yugoslavia experienced communism. The country, while communist, was never fully integrated in the communist block. The state-owned large parts of the countryside but nearly all farm or industrial workers had a few hectares where they could grow a wide range of fruit and vegetables for their own consumption. Many kept a cow or two.

Adding value

The farm of Romina Zdravec, which consists of just 12 cows, is a lot closer to the national average but this remarkable business, located close to Zagreb, is able to support two families. The cows are also housed year-round. A simple bucket plant is used for milking.

The secret is that the milk is processed into cheese, some soft, some semi-hard, on the farm. The cheese is sold to local restaurants but the majority is sold to customers at the famous Dolac market in Zagreb.



Maja and Kristijan Pandek with their four-year-old daughter.



Romina and Zeljko Zdravec.



Romina and Zeljko Zdravec live in this farmhouse (left). Their small herd lives year-round in the barn above. Cheese produced on the farm and sold directly to consumers generates a good income for the family.

The city has about 30 markets which sell fresh produce and open every day of the week. Romina's sister goes to the market every day to sell the homemade cheese. They have a large number of repeat customers.

At home on the farm, the milk is processed daily into cheese in spotless stainless steel vats and moulds. One wall of the farm office is virtually covered with certificates and commendations for the cheese's quality.

Depending on the type of cheese being produced, the roughly 300 litres of daily milk production can yield 40kg to 60kg. The whey is fed to a sty of five contented pigs who will be consumed by the family.

With the cheese selling at retail for about €5/kg, the farm is bringing in over €250/day. The Zdravec family have an enlightened view of their business. Romina says they are not looking to have the maximum number of cows possible. They are happy living in their village of 50 people and place a high value on quality of life. Nonetheless, they want to gradually increase their milk and cheese production.

Some attractive traditional buildings on the farm are ripe for development as a farm shop. An appropriate setting for direct sales of their excellent produce.



Austria, Germany and Switzerland were the source of many of the Simmentals, which arrived in Croatia in the 1990s

REDSTART FORAGE SOLUTION



Minimise the risks of feed shortages next winter by growing **REDSTART**.

We have introduced this new brassica hybrid variety for farmers who want to boost winter feed supplies cost effectively.



- Is a NEW kale/rape hybrid forage variety
- Has HIGH YIELD potential
- Has HIGH ENERGY and HIGH PROTEIN content
- Has good grazing characteristics with EXCELLENT CROP PALATABILITY
- Can be ENILED and GRAZED after cutting
- Is FAST GROWING with SUPERB REGROWTH potential
- Is EARLY MATURING - graze 70-90 days after sowing
- For WINTER GRAZING - sow from July onwards

Available in 25kg packs from all Co-ops and merchants



Tel: 0504 41100
info@germinalseeds.com
www.germinalseeds.com

An 'offal' way to add value to cattle

A surprisingly high percentage of each animal's live weight is being underutilised. Making better use of this 'fifth quarter' could boost returns for farmer and processor.

By Jim O'Callaghan
Teagasc Walsh Fellowship Student,
Maeve Henchion
Teagasc Rural Economy
Development Programme,
and **Mary McCarthy** UCC



Consumer acceptance cannot be taken for granted

The beef 'fifth quarter' is currently not yielding significant financial returns. An estimated 263kg/head is being sent to rendering for pet food or to waste streams such as landfill and incineration. Indeed, parts of the beef fifth quarter can represent a source of cost, with some factories having to pay companies to collect and dispose of this "waste".

A team of Irish researchers, led by Teagasc, is investigating ways to help the Irish beef industry achieve higher margins in a DAFM-funded project called ReValueProtein. The meat industry has traditionally focussed on maximising returns from prime meat cuts and paid less attention to the beef 'fifth quarter', which accounts for 54% of the live animal by weight (Figure 1). ReValueProtein aims to increase the profit margins from parts of the beef fifth quarter by using them in the production of other foods or by extracting components which have nutrition or health benefits.

There are two ways to increase the overall value of the fifth quarter:

- 1) exploit niche export market opportunities where specific red offal meats (e.g. tongue, liver) are perceived as speciality foods and command premium prices; and
- 2) transform beef fifth-quarter parts into high-demand foods (by either extracting ingredients, such as proteins, from white offal (e.g. blood, spleen, lungs) or using the offal as

an ingredient in another product) through the application of science and technology.

An alternative option to increase returns is to reduce the costs of disposing of the beef fifth quarter.

The potential to increase returns by focusing on the high-demand red-offal markets in Europe, Asia, Africa and Russia (when the current difficulties are resolved) is well understood and is being worked on by industry.

In 2013, Irish companies exported €210 million to such markets (Figure 2). However, the potential for adding value by transforming the less desirable parts into useful ingredients requires exploration from both a scientific and market perspective.

The market trend towards eating for health and disease prevention is of particular relevance as beef fifth-quarter parts contain active components which can provide benefits to consumers. Protein peptides and enzymes are examples of these components which, if extracted, could be used in a variety of food products that promote health and potentially reduce the incidence of certain diseases.

What needs to be done?

With every opportunity comes challenges. Along with scientific and technical feasibility challenges, the issue of market acceptability and desirability also needs consideration. Consumer acceptance cannot be taken for granted and there are numerous examples where products that offer consumer benefits have been rejected by the market due to concerns about the appropriateness of the technology applied in making the product.

Using consumer focus groups and a

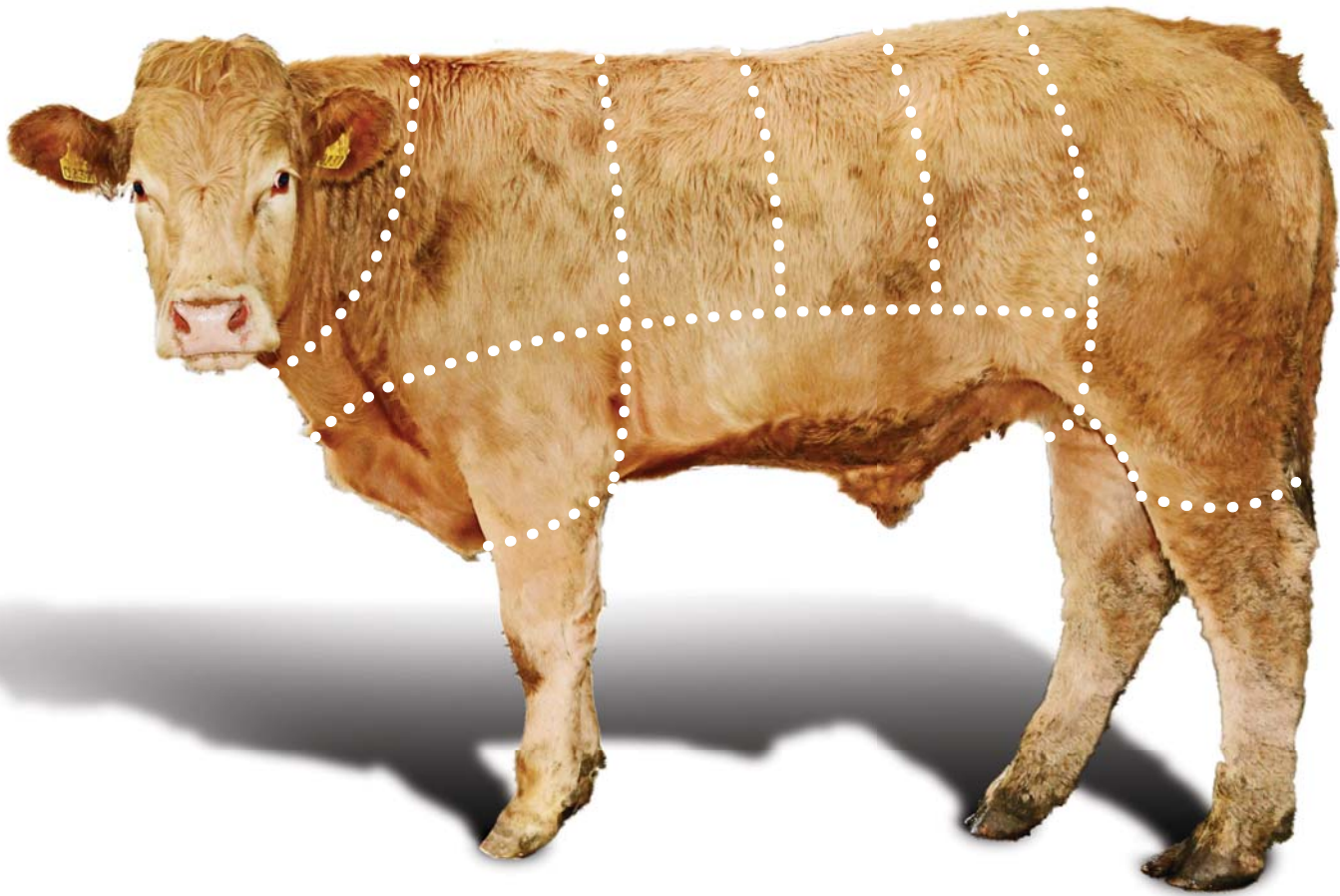
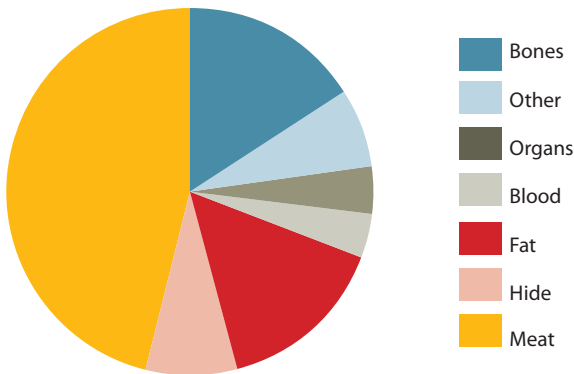


Figure 1

Breakdown of live animal (% weight)
 Meat weight (46%) and Beef Fifth Quarter weight (54%) of live cattle



Source: Rabobank, 2013

survey, we will seek to establish consumer attitudes and beliefs regarding the use of such sources of raw materials for food products as well as attitudes to a range of potential offal products and ingredients derived from this offal.

Previous research suggests that consumers may have negative opinions of these animal parts, perceiving them as “unsafe”, “unhealthy” and “unnatural”. Consumers may also consider

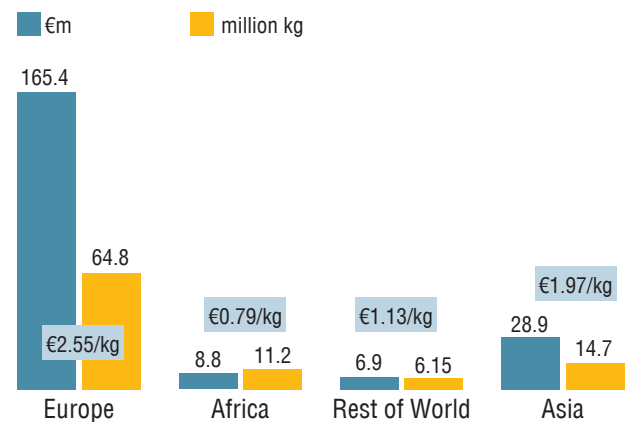
these parts to be of lower quality than prime cuts of meat. However, on the positive side, they may see them as being more sustainable from an environmental and economic perspective. Understanding consumer attitudes towards the use of these parts in food products is important as it will influence whether or not they could be successfully used in food products in the future.

The ultimate aim of the ReVal-

ueProtein project is to support the development of added value for beef fifth-quarter parts, and reduce the possibility of consumers rejecting the incorporation of safe and edible ingredients from offal in food products. When the market research is combined with the technical research conducted within the project, a strategy to increase the value of these beef fifth-quarter parts will be produced in consultation with stakeholders.

Figure 2

Irish edible offals exports by region (2013)



Source: Authors' analysis of CSO data (2014)

Social media – a new tool for farmers?

Karen Dukelow
Cattle Specialist Teagasc Animal and Grassland Research and Innovation Programme, Moorepark

Aine Galvin
Walsh Fellowship Masters student, Teagasc Clonakilty

The words social media were unheard of up to 10 years ago, but now they form a big part of people's daily lives.

Many people use social networking websites and applications such as Facebook and Twitter to communicate with others as a replacement for phone calls and SMS messages. Farm families use WhatsApp to keep in touch, inexpensively, with children abroad.

Sending a message publicly through a social networking website means it has the potential to reach far beyond the initial audience.

Smartphone users can send messages to individual contacts or groups when using social networking sites.

As well as SMS messaging, users can send each other images, videos and audio media messages. Users can indicate their current location using incorporated mapping features.

In areas where wireless internet connections are available, using social networking sites to communicate is much less expensive than paying a mobile network provider for SMS messages and phone calls.

I was initially a bit of a sceptic with regards to social media, which is probably showing my age!

I didn't understand the need for Facebook when some of my friends joined and saw it only as a way for teenagers to show off on drunken



Figure 1: Example of Facebook post and interaction.

nights out!

However, need is the greatest catalyst for change and I was forced to use social media when I was asked to co-supervise a Walsh Fellowship Master's student, Aine Galvin, whose study was to investigate the use of social media in agricultural advisory and education work.

Interesting study

Aine decided that the best way to investigate the potential was to set up a private Facebook group page for four discussion groups (two beef and two dairy) and to assess how well this worked.

Only the members and the adviser had access to the relevant Facebook group page. The private group Facebook pages were used for communication between the members themselves and with their adviser.

It was also used as a platform to share information, e.g. conference proceeding, newsletters, videos, links, etc.

An index system was then created to measure the usage of the group Facebook page by the members.

Facebook group page in action

One of the groups, The Bandon Beef Group, had decided to have extra group meetings on grassland management and this coincided well with the use of Facebook page.

Here's what some of the group members said about their group page and grass measuring.

Colin Draper said: "A lot can happen between meetings so I find using Facebook handy to compare problems happening on farms.

"Most farmers work on their own so it is good to keep in touch. It would

Table 1: Findings from Aine Galvin's study on Facebook usage by discussion groups

Variable	Category with lowest mean usage score	Lowest mean usage score	Category with highest usage score	Highest mean usage score
Usage score range		0		230
Age	51-55 years old (8%)	3.6	41-45 years old (22%)	50.4
Computer skills	Very Weak (14%)	3.6	Average (49%)	58.6
Smartphone ownership	Does not own a smartphone (63%)	25.3	Own a smartphone (37%)	55.7
Level of education	Leaving Cert (16%)	10.1	Level 8 qualification (10%)	92.8
Internet connection in the family home	Mobile broadband (9%)	10.7	Broadband via wireless (70%)	58.6



ABOVE: Karen Dukelow with some of the members of the Bandon Beef Grass Group.

be nice to see more people posting comments.

“When you see what others are doing, it drives you on, which in turn should make you a better farmer, i.e. rotations, taking out paddocks, dosing, weight gains, etc.”

“I never made it to a grass meeting but kept up to speed by using Facebook and walking the farm every week,” said **Gavin Buttimer**. “It confirmed that others were having the same problems and gave me confidence to take out grass.”

“Measuring grass got us out to every paddock regularly, and gave us confidence to push the boat out a little bit more,” added **Roy Kingston**.

“Facebook gave us a shoulder to cry on whenever we made a mistake, or when the utilisation is poor and all our efforts are unraveling, the comments are helpful and supportive. On the use of Facebook, the old rule is use it or lose it, like anything else in life.”

Dan Lucey said: “The benefits of Facebook are that it can be, and has

Useful tips

- Think before you type.
- Engage, don't preach.
- Be optimistic and realistic.
- Be yourself.

been, used as a forum for discussion and debate. Relevant articles and research findings on a debated topic can be posted by the specialist or adviser:

“Grass measurement highlights the difficulties of grass management. 10t DM/ha would seem quite attainable.

“If 8kg DM yield produces 1kg liveweight gain, this should equate to 1,250kg liveweight gain (output)/ha without meals! Major problem is difficulty in matching demand to the vast variations of grass growth.”

Some final words on social media.....

(by Tommy Moyles, West Cork Suckler farmer)

Social media such as Facebook and Twitter offer farmers the opportunity to collect or share information. In some ways they can act like a large discussion group, offering a window into how farmers live and work in other parts of Ireland and other countries and climates.

Setting up accounts on either format can be done in minutes and is free.

As well as sharing practical information amongst each other social media allows farmers to engage first hand with consumers.

This will have more and more relevance as urban populations grow and the connection with rural areas weakens.

Finally, I would like to say a special thanks to all the farmers that participated in the study, local advisors, John McNamara, Tom Curran and John Crowley. Aine, well done on your study and thanks to Pdraig Wims, UCD who also supervised this study.

Buy a ram, not a

New indices can help you avoid guesswork

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

Many of the country's 34,000 sheep farmers are deciding on what number and types of rams they should buy. A good ram can set you back anything between €400 and €800, so it's important to get the right animal.

The first step is to define exactly what you are buying the ram for. Will he be used to produce lambs for slaughter? To breed replacement females? Or do you need an easy-lambing ram to use on ewe lambs. Few rams will meet all three criteria, so it is vital that there is a clear picture as to what the ram's purpose is.

Genetic evaluations

Sheep Ireland is responsible for genetic evaluation of pedigree sheep in Ireland. The system has been revamped in recent months and now all rams are evaluated across just two indices (terminal index and replacement index).

In the past, there were four indices: overall index, production index, maternal index and lambing index. The new system is less confusing and by merging many of the important traits into the two remaining indices, it makes it easier for farmers to select which type of index best suits their need. Where a ram is required for the production of lambs for slaughter, the terminal index is the one to concentrate on.

If the ram being purchased is intended for use as a sire of future flock ewes, the replacement index should be the primary focus. Other important profit traits (lamb survival, days to slaughter, number of lambs born and daughter's milk) are also given in the evaluation relative to the breed average.

Teagasc evaluation of recorded rams has shown that, when selected on production index, rams with three, four or five stars produced offspring that were significantly heavier at



weaning time than rams with only one or two stars.

While the new revamped index has yet to be fully evaluated at farm level, it is likely to follow the same trend as the older production index and the new terminal index are well correlated.

Using genetic evaluations when selecting rams is useful but they should be used in conjunction with a visual assessment and a comprehensive physical examination of the ram. Under no circumstances should a ram that is either visually or physically inferior be selected purely on the basis that he has a good index for a desired trait.

Conformation

The conformation of the ram is always important. The majority of rams being purchased will be used to sire lambs for slaughter. Therefore, the ram should have the physical conformation you want in the lambs. Pick a ram with reasonable width at the shoulders. A long back is important as this is where the high-priced cuts are (rack and loin) and a good back end with muscle.

Rams to be used on ewe lambs being mated for the first time should be of a more moderate size, have narrow shoulders and a reasonably long neck. These are all characteristics which should reduce lambing difficulties.

pig in a poke



Sheep Ireland is responsible for genetic evaluation of pedigree sheep in Ireland.

The revamped sheep index – courtesy of Sheep Ireland

Lot 1	Owner: Anne Murphy, Goerv, Belcarrig, Co. Wexford Breeder: Pat & Barry Farrell, Oberstown, Tara, Co. Meath
Animal	Ancestry
PFI12014	LIVERY PREDATOR VTLO9922
D.O.B. 02-02-12	ALLANFAULD XMM08051
OBERSTOWN TUFF	ALLANFAULD ROCKAFELLA XMM1000014
Texel	OBERSTOWN PFI09037
Male	SILVER HILL ONSLO NVI08007
Twin	OBERSTOWN PFI06038
M & F Scanned: Yes	
Comment:	

Euro-Star Indexes – 16/05/14	
Replacement (€1.28) Acc 48% Rank: Top 10%	Terminal (€0.72) Acc 57% Rank: Top 20%
★★★★★	★★★★★
Lamb Survivability (+ 3.45%)	0% ——— Top 15% ——— 100% Acc 64% (V.Good)
Days to Slaughter (-4.54 days)	0% ——— Top 30% ——— 100% Acc 55% (Good)
No. of Lambs Born (€1.44)	0% ——— Top 50% ——— 100% Acc 33% (Good)
Daughters Milk (€0.42)	0% ——— Top 25% ——— 100% Acc 55% (Good)

Health treatments

All flock health treatments should be completed well in advance of the breeding season. In particular, vaccinations or dipping (which may give rise to raised body temperature such as post-dipping lameness) should be avoided in the two months before the breeding season.

It is a good idea that any purchased rams go through a rigorous quarantine procedure on arrival and before being mixed with any other sheep on the farm. Key areas that need to be addressed are:

- Internal parasites: Anthelmintic resistant fluke or worms.

- External parasites: Sheep scab, biting and sucking lice, ticks.
- Foot infections: Footrot, contagious ovine digital dermatitis (CDD).
- Other infections: Orf, CLA, borders disease, etc.

Full vaccination to bring the sheep to the immune status of the rest of the flock will also be required during this period. It is usually best to assume that no vaccination programme has been implemented on the previous farm.

Start the ram(s) on the primary course which, in most cases, requires initial vaccination, followed by a booster a number of weeks later.

Functional characteristics

Good functional characteristics will ensure that the ram is up to the job. Feet and legs are important. Rams that are lame, or those that display signs of having been lame in the past (misshapen hooves, sore brisket) should be avoided.

An active ram will eat very little during a typical six-week mating period, so he needs to be in good body condition at the start of the breeding season.

To ensure he will eat plenty of grass and gain condition prior to the season he needs to have a mouth where the teeth are correctly aligned to meet the dental pad and there are no pro-

truding molar teeth that will cause abscesses to the lining of the mouth or gums.

Temporary infertility caused by body temperature rises in rams in advance of or during the breeding season are relatively common.

To prevent this, great care should be taken of the ram flock for the two-month period approaching mating as any significant temperature rise (even for a short period of 24 hours) can render the ram infertile for five to eight weeks.

It is a good idea to purchase replacement rams at least two months in advance of the breeding season to allow sufficient time for acclimatisa-

tion on the new holding but, also, to ensure that the ram does not suffer an infection/illness likely to result in temporary infertility.

Conclusion

The ram contributes half the flock genetics and buying one is a significant investment. Most experienced sheep farmers will have a good idea of what they are looking for in terms of a ram's appearance.

The genetic evaluations and indices developed by Sheep Ireland add another string to the bow of farmers who are looking to choose the best ram to boost profitability on their sheep enterprise.

dairying

Traffic-light toolkit for milk protein improvement

John Maher, James Fleming & Noreen O'Rahilly, Teagasc advisers
Siobhan Kavanagh, nutritionist,
Teagasc Animal & Grassland Research and Innovation Programme

The price paid for manufacturing milk in Ireland is determined by its fat and protein content, with bonuses/penalties for quality parameters. Currently, the value of milk protein is between two and three times that of milk fat. Milk protein is the most important component in determining the return to the producer. The payment for protein in milk is expected to increase faster than that for fat in the coming years.

Progress with increasing milk percentage has been slow, just 3% (according to the CSO) over the last decade. So, any programme that helps farmers to identify and influence the factors contributing to low milk proteins must be promoted.

The Greenlight Toolkit for Milk Protein Improvement provides a framework for farmers to self-assess their ability to achieve a high milk protein percentage. It focuses on the key parameters which contribute to low milk protein on farm. The key parameters include genetics (PD for milk protein), median calving date, milk protein percentage in mid-March, grass quality, grazing management factors, including rotation length during the main grazing season, pre-grazing grass covers, grazing periods in each paddock during the main grazing season, post-grazing height, percentage of the farm reseeded annually and silage quality.

Each parameter is broken into very good practice (A: Green light), moderate practice (B: Amber light) and poor practice in terms of delivering milk protein percentage (C: Red light).

Farmers simply tick the box (A, B or C) for each parameter, relevant to their farm. A weighting system

is attributed to the key parameters, highlighting the fact that breeding explains 60% to 70% of the variation in milk protein percentage.

The farmer adds up the number of As, Bs and Cs he/she has and the guide on the worksheet will highlight the stage he/she is at in terms of a milk protein percentage improvement programme. This will help the farmer highlight the areas where best practice is not adopted on his/her farm. By using this tool, a farmer will need to walk through his/her management practices one-by-one to highlight the limitations of their farming system in terms of delivering milk protein output. This self-assessment process should identify two or three key actions needed on the farm. The Greenlight Toolkit will be used by the Joint Industry Programme workshops.

Join programme

North Cork Co-op, in conjunction with Teagasc, has set up a joint programme with six demonstration farms to achieve more measurement and better technical management among their suppliers. North Cork Co-op is one of the smaller co-ops in the country with 135 suppliers. Liquid milk production was always a large part of the product mix. It is still a focus but, recently, it opened a new spray drier, producing skim milk powder for the Irish Dairy Board and private sales. So, more milk protein and fat is what North Cork Co-op is aiming to source from suppliers.

As part of the North Cork strategy to increase milk solids produced, the co-op is subsidising AI straws for nominated sires that fit clearly defined criteria. Also, suppliers who have not been milk recording are being incentivised to do so. The aim of both of these measures is for suppliers to breed and milk cow herds, which will meet the co-ops' requirements and yield more profit for the supplier.





Any programme that helps farmers to identify the factors contributing to low milk proteins must be promoted.

Checklist for successfully achieving high milk protein in a grass-based system (tick the relevant box)

Breeding - 65% of the gain	1. PD for milk protein % (see EBI report)	1) 0.09 approximately	<input type="checkbox"/>
		2) 0.06 approximately	<input checked="" type="checkbox"/>
		3) 0.03 approximately	<input type="checkbox"/>
	2. Milk protein % in mid-March (target 3.4% annually)	1) 3.25 approximately	<input type="checkbox"/>
		2) 3.2 approximately	<input checked="" type="checkbox"/>
		3) 3.15 or less	<input type="checkbox"/>
	3. Median calving date (see ICBF calving report)	1) Late February	<input checked="" type="checkbox"/>
		2) Early March	<input type="checkbox"/>
		3) After 10 March	<input type="checkbox"/>
	Nutrition - 35% of the impact on milk protein	4. Grass quality (throughout the year)	1) High digestibility - leafy fresh grass
		2) Moderate digestibility	<input type="checkbox"/>
		3) Low digestibility	<input type="checkbox"/>
5. Rotation length (main grazing season)		1) 21 days approximately	<input checked="" type="checkbox"/>
		2) 28 days approximately	<input type="checkbox"/>
		3) 35 days approximately	<input type="checkbox"/>
6. Pre-grazing grass cover		1) Medium	<input checked="" type="checkbox"/>
		2) High	<input type="checkbox"/>
		3) Very high	<input type="checkbox"/>
7. Grazing period in each paddock (main grazing season)		1) 36-hour blocks	<input checked="" type="checkbox"/>
	2) 24-hour blocks	<input type="checkbox"/>	
	3) 12-hour blocks	<input type="checkbox"/>	
8. Post-grazing height	1) 4cm	<input checked="" type="checkbox"/>	
	2) 5cm	<input type="checkbox"/>	
	3) 6cm	<input type="checkbox"/>	
9. Percentage of the farm reseeded annually	1) 10% approximately	<input checked="" type="checkbox"/>	
	2) 5% approximately	<input type="checkbox"/>	
	3) 2% or less	<input type="checkbox"/>	
10. Silage quality	1) High digestibility 75 DMD (cut late May)	<input type="checkbox"/>	
	2) Medium digestibility 70 DMD (cut early June)	<input checked="" type="checkbox"/>	
	3) Low digestibility 65 DMD (cut mid-June)	<input type="checkbox"/>	
Add scores	Count the number of greens	7	<input type="checkbox"/>
	Count the number of ambers	3	<input type="checkbox"/>
	Count the number of reds	0	<input type="checkbox"/>

If mostly greens (and it must include a green for number one, the PD for milk protein percentage): Congratulations! You are on target to reach a target milk protein of 3.5% or higher annually.

If mostly ambers: There is some work to be done to improve both breeding and grassland management.

If mostly reds: There is a lot of work to be done to improve both breeding and grassland management.

Farmer focus

North Cork Co-op and Teagasc recently held a farm walk to launch the Greenlight Toolkit for Protein Improvement on the farm of Martin, Anna and James O'Riordan, Ballynoe, Kilbrin, Co Cork. A major component of this event was to complete the Greenlight Toolkit for protein improvement for this farm (see adjoining checklist). The farm performed well on the checklist but there are some areas for improvement. This is their farm story:

The O'Riordan family have a 64ha milking platform of mixed heavy and dry soils. Up until recently, they were milking 80 cows with a relatively low stocking rate. But now that a plan has been developed to increase cow numbers to 130, they are going to invest more resources into growing extra grass. This involves improving soil fertility, drainage and making better use of the 64ha grazing block. This year, the O'Riordans will milk close to 105 cows and, at the time of the farm walk in early April, all but one of the cows had calved. There are 33 maiden heifers for breeding this year, so a target to milk close to 130 cows next year is realistic.

Last year, the herd supplied 468kg MS/cow on 1.1t of meal per cow and grazed grass. This was 5,956 litres per cow at 3.54% protein and 4.07% fat. The EBI of the herd is €143 (€33 milk/€91 fertility) and there are 33 maiden heifers with an EBI of €173 waiting to come in. Herd fertility is excellent and the six-week calving rate was 83%, with a 365-day calving interval for 2013.

It is not surprising that their herd is producing milk with a protein content of greater than 3.5% annually, given the genetic merit of the animals. This is highlighted by the red circle on the EBI report (PD for milk protein percentage of 0.07). However, there is always room for improvement as outlined in the Greenlight Toolkit.

The replacements highlighted by

HerdPlus®
Profit through Science

LoCall 1850 600 900

**Economic Breeding Index (EBI)
Herd Summary - April 2014**

Herd Owner: MARTIN O'RIORDAN

Data Extracted: 28/04/2014

1. EBI Herd Summary
Average EBI for all dairy cows with: (i) a known sire (or milk recorded progeny with a known sire) and (ii) are currently on your farm.
* Number of animals that are missing an EBI result

Animal Group	Num of Cows	Milk Kg	Fat %	Prot %	Surv% CI Days	Milk % Cont	Fertility % Cont	Calv % Cont	Beef % Cont	Maint % Cont	Mgmt % Cont	Health % Cont	EBI €
Cows with EBI	105	42	3.54	4.07		€ 33	€ 91	€ 21	€ -2	€ 2	€ 0	€ -2	€ 143
Missing EBI*	1	5.7	0.08		1.9	21.7%	60.3%	13.8%	-1.1%	1.3%	0.1%	-1.7%	
Total Cows	106	4.6	0.07		-5.5								
1st Lactation	21	111	6.2	0.05	2.0	€ 38	€ 89	€ 23	€ 2	€ 0	€ 2	€ -4	€ 149
			6.3	0.05	-5.2								
	19	112	5.8	0.03	2.1	€ 35	€ 97	€ 23	€ 2	€ 0	€ 2	€ -2	
			5.9	0.05	-5.7								€ 156
3rd Lactation	27	17	5.2	0.09	2.0	€ 28	€ 94	€ 22	€ -1	€ 0	€ 0	€ -3	
			3.6	0.06	-5.6								
			3.6	0.06	-5.6								€ 140
4th Lactation	16	-93	2.2	0.12	1.8	€ 14	€ 92	€ 21	€ -4	€ 2	€ -2	€ -2	
			0.5	0.07	-5.6								
			8.1	0.13	1.5	€ 46	€ 85	€ 16	€ -8	€ 7	€ -1	€ -1	€ 121
5th Lactation (+)	22	44	6.2	0.1	-5.3								
			2.2	0.12	1.8	€ 14	€ 92	€ 21	€ -4	€ 2	€ -2	€ -2	
			0.5	0.07	-5.6								€ 144
2. Dairy Youngstock													
14 Calves	34	92	10.0	0.13	2.6	€ 54	€ 108	€ 28	€ -6	€ 3	€ 1	€ -3	
Missing EBI*	0		7.9	0.1	-6.1								
Total Calves	34												
													€ 173
13 Calves	33	83	8.5	0.11	2.1	€ 43	€ 100	€ 32	€ -3	€ 3	€ -1	€ 0	
Missing EBI*	0		6.2	0.08	-6.0								
Total Calves	33												

the green circle on the EBI report are superior for both protein content and yield of protein. Martin and James are strongly of the view that "Breeding and grassland management are the two most important factors influencing the production of protein on our farm".

This year, the AI sires chosen for the herd are a minimum of 0.15% protein and fat percentage, and +8kg protein and 10kg fat. These are the minimum criteria set down as part of the co-op improvement programme. The sires chosen are entirely black and white from the active bull list on the ICBF website.

In most years, cows are turned out to grass in February and housed by

December. Grassland management is always a challenge when aiming to keep the best quality grass in front of cows.

Grass surpluses are taken out as baled silage to control grass quality in the mid-season. Fertilizer in the form of N+S or N+P+K is spread immediately after grazing.

Both of these processes are necessary to maintain quality grass ahead of the cows and avoid the classic mid-season drop in milk protein. The O'Riordan herd avoids the mid-season protein slump thanks to strong genetics for protein and good grassland management. Another plus is that about 85% of this farm has been reseeded in the last 10 years.



The value of milk protein is between two and three times that of milk fat.



There is little we can do to alter the actual process of ruminant digestion, particularly on a diet which is 75% grazed grass.

No surprises on sustainability

The Carbery Greener Dairy Farms project shows that what's good for the environment is also good for profit

James Humphreys, John Upton, Donal O'Brien, Eimear Ruane, Eleanor Murphy and Laurence Shalloo
Teagasc, Animal and Grassland Research and Innovation Programme, Moorepark

The Carbery Greener Dairy Farms project aims to improve the sustainability of dairy farms in West Cork. Sustainability refers to the efficient use of resources, carbon footprint and economic viability. In general, higher resource-use efficiency will result in a lower carbon footprint and a better economic outcome for the farmer.

Resources include fertilizers, concentrates, electricity and water. The bottom line for this innovative project is to quantify and highlight the high efficiency of milk production in West Cork and to identify areas for improvement.

Carbon footprint

The carbon footprint is the sum of all the greenhouse gases generated in the production of that product.

The carbon footprint is increasingly

used by retailers to promote products. A sophisticated accounting system for all the greenhouse gases used in the production of a litre of milk has been developed at Teagasc Moorepark.

The Moorepark system shows that the average carbon footprint of each kilo of milk produced on the Carbery Greener Dairy Farms is just 1.14kg. Internationally, the carbon footprint of milk averages approximately 2.5kg per kilo of milk, ranging from 1kg to 9kg per kilo of milk, according to a recent FAO report.

What can we do to lower the carbon footprint of our milk?

The Teagasc Moorepark system helps us to identify areas where there is potential to lower the carbon footprint of milk even further. The single biggest contributor to the carbon footprint is methane gas generated by ruminant digestion (42%).

In practice, there is very little we can do to alter the actual process of ruminant digestion, particularly on a diet which is 75% grazed grass.

However, if we can improve the productivity of the dairy herd by lowering the replacement rate, increasing the survival of cows in the herd and by increasing milk solids production per cow, we will lower the amount of methane produced per litre of milk. Hence, improving the EBI of the herd will lower the carbon footprint of milk produced.

.....
» Continued on next page



The aim is to identify areas where there is potential to lower the carbon footprint of milk

» From page 19

The second largest contributor to carbon footprint is fertilizer use, particularly fertilizer N use (23%). The more efficiently we use lime, fertilizers, slurry and clover, the lower the carbon footprint of milk. The third and fourth largest contributors are greenhouse gases generated by concentrates and silage fed and manure management.

With a longer grazing season, there is less need for silage and concentrate supplementation and there is less manure to be managed because the livestock recycle the dung and urine directly onto the pastures. Hence, early turnout to grass and a long grazing season are a key component of lowering the carbon footprint of milk. The fifth largest contributor is fuel and electricity use. Efficient electricity and fuel use will lower the carbon footprint of milk. A long grazing season that reduces the need for silage-making and slurry handling is a key strategy for lowering fossil energy use on farms.

 In summary

Improving farm sustainability is about getting simple things right:

- Improving soil fertility,
- Growing more grass,
- Achieving a longer grazing season,
- Feeding less concentrates,
- Improving the herd EBI in order to efficiently harvest grass.
- Efficient use of energy and water.

Identifying areas for improvement

In general, management on farms in the project is excellent. The average stocking density is 2.5 LU/ha and the average fertilizer N use is 255kg/ha. The average EBI is 148, ranging from 120 to 177. The average length of the grazing season was 278 days, ranging from 259 to 303 days. The average concentrate use in 2013 (865kg/cow) was high due to the late spring. There was more scope for improvement of the above performance indicators on some farms than others.

The single biggest and most common weakness identified for improvement across all farms was soil fertility and, specifically, soil pH. The pH of soils generally ranges between four and eight. Low pH soils are more acidic and a pH of seven is neutral. Many soils in Ireland are naturally acidic and the application of nitrogenous fertilizers and rainfall gradu-

ally increases soil acidity.

The average soil pH on the Carbery farms was 5.9 and averages on individual farms ranged from 5.3 to 6.8. Of all the soil samples in the study, 59% had a pH less than 6.0 and 79% were less than the recommended level of 6.3 for grassland.

Soil pH and lime

Low pH – acidity – shuts down soil biological activity. At a very low soil pH of between four and five, the biological activity of earthworms and other organisms in the soil is very low, which affects soil N availability and the response to fertilizer N.

Low soil pH also increases the availability of aluminium, high levels of which are toxic to plants, at the expense of desirable nutrients such as potassium, phosphorous, sulphur and many trace elements. Furthermore, soil pH has a strong influence on the botanical composition of swards.

Unproductive grass species, such as *Agrostis* and *Fescues*, are more competitive at low soil pH and can rapidly eliminate more productive ryegrasses and clover from swards. This is often seen in reseeded swards where low soil pH has not been corrected by liming. The newly established ryegrasses can be virtually eliminated by less desirable species within a year or two.

Applying ground limestone is a cost-effective way of increasing soil pH, the availability of N, P and K in the soil and of increasing the productivity of grassland. This is not a new message; lime has been in widespread use for agricultural purposes in Ireland for over 200 years. However, as the farmers have said themselves: “While their focus has been elsewhere, they had taken their eye off the ball” with regards to lime use.

This was partly remedied in 2013 with between 10% and 75% of the area of individual farms receiving lime, depending on soil test results. A key focus is to bring soil fertility up to optimum levels within the lifetime of the project.

Electricity and water use on farms

Sophisticated methodology is being used to measure electricity use on farms for milking and milk cooling. Equipment configuration on farms is being assessed for their ability to deliver a financial return on running costs and capital invested.

Results to date indicate that a 2:1 ratio of water to milk in the plate cooler as well as a direct expansion bulk tank, heating water using night-rate electricity and standard vacuum pumps is the best configuration to maximise farm profitability. Ongoing work is taking a similar approach to optimising water use on farms.



Farmer profile



Aidan McCarthy (pictured left) milks 143 cows near Skibbereen.

Aidan McCarthy farms 240 acres (225 workable) near Skibbereen on the Cork coast. His milking platform is 108 acres and he milks 143 cows. His cows average 4,573l/cow and are fed 1,053kg of concentrate.

Aidan got involved in the programme in April 2012. "Initially, the aim was to get a picture of what the baseline was for Ireland," says Aidan.

As part of the scheme, he measures virtually everything that is used on the farm. "I record diesel oil usage, sprays, feed, fertilizer, men employed/ hours they work, mileage on cars, number of days cows are inside," he said. He also records the hours he works himself. "Unsurprisingly, this came to 80 to 90 hours in spring."

Aidan says once you are regularly recording it becomes more interesting because you can set specific targets. "You must have achievable goals, not pie in the sky stuff. The financial side is the driver. Saving a couple of cents per litre can make a huge difference but the green argument is also a huge selling point. But I believe most farmers like to do things as right as they

can from a moral perspective."

One step he has taken is to go from ice bank cooling to direct expansion, which has reduced cooling costs by 36%. In general, he has been reducing electricity costs which have fallen by 22%. This was made up of a 36% drop in milk cooling costs, a 25% drop in water heating and an 8% drop in lighting costs.

Aidan, who participates in Pasture-Base Ireland, says: "My aim is to get even more solids per hectare and more milk from grass but we will always need to feed concentrates at the shoulders of the season."

Aidan has invested hugely in his farm in recent years and when asked what his best investment has been, he immediately replies, smiling: "Tunnels."

With his land in five blocks, tunnels under roads can have a huge effect on efficiency and access to paddocks.

"Everyone's challenges are different," he concludes. "But we can all reduce our environmental impact and cut costs in the process."

– Mark Moore & Pauline O'Driscoll

BETTER MILKING WITH...

DAIRYMASTER

Dairymaster has a system that is right for you, talk to us today on how we can help you create your perfect parlour.

" Since I changed to Dairymaster parlour and pulsation system I have seen a dramatic decline in mastitis. My SCC has come down from an average of 300,000 to 90,000. It's fantastic. "

Ray Murphy, Kilbride, Co. Wicklow

100% IRISH

Experience the difference... Call for a brochure today...

Call: 1890-500-24-7

Distributors Nationwide - www.dairymaster.com

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

Crop planning for 2014/15

If you have tillage crops start planning now to make sure you comply with the new area aid rules

Michael Hennessy,
Teagasc Crops, Environment
and Land Use Programme

From 2015, a new payment structure will replace the Single Farm Payment (SFP). There will be two distinct payments instead of the SFP: the Basic Payment Scheme (approximately 70% of the total payment) and a Greening Payment (approximately 30% of the total payment). Both of these schemes are mandatory. Payments overall will be reduced to allow for convergence, young farmers' payments, etc, but these won't be discussed in this article as it will focus on the obligations under the greening element.

Greening

The rules attached to greening are divided into three areas: crop diversification, permanent grassland and ecological focused area (EFA). As the permanent grassland obligation will be fulfilled at a national level, it will not affect growers. Growers can continue to rotationally plough grassland, except in areas of natural habitats.

The main exemptions are:

- Where 75% of the eligible land is in grassland and the tillage area is not greater than 30ha.
- Land is in organic farming.
- Other exemptions are available but affect very few growers.

Crop diversification

The aim of this measure is to encourage crop diversity.

- There is no crop diversification requirement where a farmer plants less than 10ha of arable land.
- At between 10ha and 30ha of arable planting, he is obliged to grow at least two crops, and any one crop cannot exceed 75% of the arable land.
- Where a farmer holds more than 30ha of arable land, he is obliged to grow at least three crops, of which the

main crop shall not cover more than 75% of the crop land. The two main crops together must not cover more than 95% of the arable land. Permanent grassland does not count as a crop for the three-crop rules. However, temporary grassland can be counted as a crop and comes into the calculation, if greening is required.

The tables on page 27 will give you an idea of the requirements for farmers in three scenarios.

The farmer in **Scenario 1** has over 75% grassland (85.7%), therefore he is "green by definition" and is not subject to greening requirements. However, if the grower was to plough out 20ha of permanent pasture and plant 20ha of spring barley, then he would be subject to greening as the total grassland area would fall to 67% of the total area.

As the farmer in **Scenario 2** has less than 75% grassland (the farmer has 71.4%), greening rules apply. This means the farmer must have three crops, which are on the farm anyway: temporary grassland, spring oats and spring barley. He must also ensure that no single crop exceeds 75% (the highest is 46% temporary grassland) and two crops cannot exceed 95%. If the farmer continues this crop mix, he will qualify for greening. However, he must also comply with EFA rules.

The grower in **Scenario 3** has more than 30ha of tillage and is therefore subject to greening. Even though the farmer has three crops, the ratio of the crops is not correct under the greening rules. Spring barley is 77% of the total arable area but this should not exceed 75%. The farmer will have to reduce the area of spring barley by planting at least 3ha (to be safe) of another crop, such as more spring oats or winter barley, temporary grassland, etc, to qualify for greening. The farmer must also meet the EFS rules.

How many farmers will be affected?

Preliminary figures completed by the Department, based on previous applications, suggest that over 30% of growers will need to change practice (either plant more crops or change the ratio of crops sown). This is only indicative of what was done in the past, therefore the calculation must be done each year, so that if the crops sown or cropping structure changes, you remain compliant.



Some groups of farmers will be disproportionately affected, such as malting barley farmers and farmers engaged in share farming.

For malting barley growers, these rules will require them to reduce their overall acreage of malting barley on the farm – where the entire farm is planted to malting barley. This will result in a loss of income from the malting barley crop, a potential loss of contracts in the short/medium term and it will force farmers to grow crops they may have less experience with, such as winter barley and



As most land owners will claim the new payments, the obligation is on the land owner to have the required amount of crops to qualify for greening.

beans. Unfortunately, there is no way around the rules for these growers at the moment.

For farmers engaged in share farming, the greening rules also present difficulties as most of these farms are block cropping to increase efficiency.

As most land owners will claim the new payments, the obligation is on the land owner to have the required amount of crops to qualify for greening. This may reduce the attractiveness of these land parcels to the share farmers due to the extra costs incurred in planting more than one crop

Scenario 1: Mostly grassland

Crop	Area planted (ha)	% of total area	Note
Permanent grassland	80	76%	The combination of grassland is above 75% - Exempt from greening
Temporary grassland	10	9.5%	
Spring oats	5	4.8%	"Green by Definition" as the farmer has over 75% grass and less than 30ha of arable crops
Spring barley	10	9.5%	
	105		

Scenario 2: Significant area of tillage

Crop	Area planted (ha)	% of total area	% of arable area	Note
Permanent grassland	50	47%	N/A	The combination of permanent and temporary grassland is below 75% - greening rules applies
Temporary grassland	25	24%	46%	
Spring oats	20	19%	36%	The total area of tillage is 55ha (30ha crops plus 25ha of temporary grassland). Greening requirements apply
Spring barley	10	9.5%	18%	
	105			

Scenario 3: Mostly tillage

Crop	Area planted (ha)	% of total area	% of arable area	Note
Permanent grassland	40	38%	N/A	Grassland is below 75% - greening applies
Temporary grassland	5	5%	8%	
Spring oats	10	10%	15%	Has three crops but main crop is greater than 75%
Spring barley	50	47%	77%	
	105			

on the same farm. Teagasc is working with the DAFM to devise a solution to help with this problem under existing rules. This is being considered at EU level at the moment.

Ecological focused areas (EFA)

Farmers who are obliged to comply with the greening rules and who have over 15ha of arable land must have at least 5% of that area dedicated to EFAs. A landscape feature includes hedges, ponds (maximum of 0.1ha), ditches, catch crops, nitrogen fixing crops, etc.

The DAFM is calculating and mapping these areas on their system and, according to their calculations to date, a large proportion (60%+) of farmers fulfil the 5% EFA with their existing hedges/ditches on their lands.

Growers with large fields or fields with no hedges (areas such as south Kildare, north Kildare and parts of Meath come to mind) may not have enough EFA area.

Planting of beans/peas will help to fulfil the EFA requirement and will also qualify for one of the two/three crops (under crop diversification).

A wise step on the

A registered partnership addresses the concerns of all family members, while providing an opportunity for a trained son or daughter to develop confidence and farming ability.

Tom Curran*

The successors on many Irish family farms have completed their agricultural education by their early twenties but, often, have to wait until they are 35, or more, before inheriting the business. Typically, a son or daughter comes home and performs the daily duties but has little or no input into decision-making or the business side of the farm. But it is critical for them to learn the link between the daily work and its effect on the business of farming. The farm business should also benefit if a son or daughter has the opportunity to use what they have learned in their agricultural education.

The opportunity to gain experience and take responsibility for specific tasks builds the young person's confidence in their ability. When this can happen while benefitting from the advice and experience of parents, so much the better. A partnership, where daily duties and management are shared, is a prudent step on the way to full succession.



Gaining experience and taking responsibility for specific tasks builds the young person's confidence in their ability

Family concerns

Transferring the family farm to the next generation can be a difficult process which raises many questions and legitimate concerns. Putting potentially difficult discussions on the 'long-finger' is understandable but often results in a last minute dash as the son or daughter approaches 35. There are genuine concerns around income security for the parents and other family members. These concerns can be alleviated by the discussions involved in forming a registered partnership.

The solution

At the recent Teagasc Collaborative Farming Conference, Imelda Kinsella, a young dairy farmer in a registered



partnership with her parents Seamus and Marie in south Kilkenny, outlined the benefits of entering into a registered partnership. Having completed the advanced certificate in dairy farming at Clonakilty Agricultural College, Imelda returned to work on the home farm in 2001.

"I was at a meeting of our local Teagasc discussion group where milk production partnerships were discussed," says Imelda. "I decided to explore the option of a milk production partnership with my parents. This involved detailed discussions with our Teagasc adviser Hugh MacEneaney, accountant and solicitors."

An agreement was drawn up, including a profit-sharing ratio and respon-

Imelda Kinsella is pictured with her Friesian cows on her farm at Ballytarsney, Mullinavat, Co Kilkenny.

way to full succession



Future of partnerships

It is important to note that while milk quotas are ending on 31 March 2015, registered partnerships will continue. Access to additional milk quota was only one benefit from partnerships. The additional benefits for both parents and young farmers, as discussed in this article and highlighted by young dairy farmer Imelda Kinsella, are even more significant. In fact, the registered partnerships idea is being extended to include all enterprises. That means registered partnerships will be open to beef, sheep and tillage farms. A new register will be maintained by the Department of Agriculture, Food and the Marine in Portlaoise.

For further information on partnerships or other collaborative farming arrangements, contact the dairy partnership registration office, Moorepark, Fermoy, Co Cork. 025-42244.

www.teagasc.ie/collaborativearrangements/.ie



sibilities were shared between the family members. Imelda's share of the profit began relatively low but as time moved on and she played a bigger role in running the farm her profit share from the partnership grew larger. "Forming the partnership gave me a level of control and an input into management and decision-making that I would not have otherwise had," says Imelda. "It also provided an environment where I could learn from the experience of my parents."

Other important benefits

An improved lifestyle is often associated with partnerships as there is a sharing of work and responsibility which provides more flexibility and

time to farmers in partnerships for family and other interests. The Kinsellas highlight this by saying "we are very happy farming in partnership as we are making a healthy living and have a very good quality of life".

The partnership generated income tax benefits as it allowed Imelda to avail of the young farmer stock relief when the herd was growing, as well as dividing the farm profits between herself and her parents.

As she was in a milk production partnership Imelda qualified for any young farmer top-ups in grant aid schemes for the development work done on the milking parlour and other buildings in the farmyard. She says that "these young farmer benefits

were also an incentive for my parents to consider forming the partnership".

Since the partnership began, the Kinsellas have grown the enterprise from 65 cows to 120 cows. Replacement heifers are reared and 100 cattle are finished to beef. The partnership allowed Imelda to buy additional milk quota in Category 1 of the milk quota exchange and combine this with Seamus and Marie's quota. This was central to the expansion of the dairy enterprise in the milk quota regime.

**Tom Curran is a Teagasc Farm Structures Specialist working on the subject of collaborative farming, including registered partnerships, share farming and contract heifer rearing.*

Planning for profit

James McDonnell & Fintan Phelan
Teagasc Rural Economy
& Development Programme

"I have no plan, so nothing can go wrong"...

– Spike Milligan

Farm planning means deciding in advance what should be done, how it is to be done, when it is to be done and by whom. For example, when you go to the mart, and you see a bullock that is good value, should you buy it even if it does not fit your system?

Have you asked yourself: "Are there weaknesses as well as strengths in what I am doing now and could a plan help me to farm better?" and also "what am I good at?" It is always good to play to your strengths and get some help where you need it. An important part of any plan is to ask: who in your family helps out? We all need support. The network that supports your farm also includes your adviser, vet, bank manager, etc.

Given the demands of farming, it is easy to lose sight of what is happening outside the farm gate; for example, the changes from the Single Farm Payment to the new Basic Payment System. This will now allow us to see the payment stream for the next five years and account for a vital element of income in your plan.

The farmer's plan

There are two main parts to a farm plan:

- The thinking process, i.e. what the physical farming operation will look like over the period covered by the plan.
- The financial process, i.e. what the cashflow and farm profits will look like during and at the end of the plan. This will help to assess if the proposed plan is viable.

The thinking process

This involves asking yourself:

- **Stage 1:** Where am I are going?
- **Stage 2:** How will I get there?
- **Stage 3:** What extra costs, benefits or risks is my plan expected to generate?

Many of these ideas are already in your head but writing them down will



Many ideas are already in your head but writing them down will help clarify them for you.

help clarify them for you. It will also help in preparing your financial plan and give you a much better understanding of the background to the figures.

• **Stage 1:** Thinking about where my business is going. This involves looking at the "big picture" of your current situation and any plans you may have. Questions include:

1. Why am I farming?
2. What am I thinking of doing?
3. How is this going to deliver on my reasons for farming?

• **Stage 2:** Thinking about what I have to do. The questions that may be considered under this heading are:

1. Where am I now?
2. What are the main issues I must focus on?
3. What do I have to do to get there?
4. When will I make these changes?
5. How will my plan affect my working day?

• **Stage 3:** Extra costs, extra revenues and extra risks. This is a basic financial assessment of the proposed plans looking at the cost, benefit and risks before proceeding onto a detailed financial plan.

1. What are the extra costs?
2. What extra revenue will be generated?
3. What could go wrong?

The financial process

• **Stage 4:** Developing a financial plan. Following completion of the farm plan, you and your adviser can prepare a detailed financial plan to fully examine the financial viability of your proposals. This includes:

- Profit and loss statement
- Balance sheet
- Multi-annual cashflow

WORKBOOK

The "My Farm, My Plan, Planning for My Future" workbook is available at your local Teagasc office, on the Teagasc website at Teagasc.ie or download it by scanning the code below:





LEFT: Gerard McCutcheon (Teagasc, Oak Park), Stan Lalor (Teagasc, Johnstown Castle), John Finlay (host farmer) and Paul Tully (pig farmer) at the Ballacolla farm walk in Co Laois.

Save money with pig slurry

Amy Quinn, Moorepark & Gerard McCutcheon, Oak Park, Pig specialists, Teagasc Animal & Grassland Research and Innovation Programme

There are over 300 commercial pig units in Ireland producing more than 500m gallons of pig manure annually. That's enough to fill 100,000 slurry tankers. Pig slurry is valuable stuff. It's a superb organic fertilizer for tillage and grassland and, by applying pig slurry, farmers can make substantial savings on chemical fertilizer.

Fertilizer value

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

	N	P	K
Nutrient content kg/m ³	4.2	0.8	1.9
Nutrient availability %	50	100	100
*Fertilizer cost/kg (€)	1	2	1
Value (€)	2.10	1.60	1.90

Note: 1m³ equals 220 gallons.

*Based on chemical fertilizer prices in February (N at €1/kg, P at €2/kg & K at €1/kg).

The fertilizer value of pig manure depends on the quantity and the cost of the chemical fertilizer that it can replace.

The value at 4.3% solids is €5.60/m³ when there is a requirement for nitrogen (N), phosphorus (P) and potassium (K) and when the availability of the N to the crop is 50% (Table 1). This corresponds to €25.45 per 1,000 gallons.

As the content of the solids increases, the fertilizer value rises too. A hydrometer will allow you to measure the level of solids and establish the true nutrient content.

Applying pig slurry based on a fertilizer value of about €25 per 1,000 gallons can yield substantial savings even when the cost of transport and spreading are deducted.

The transport cost will vary and should always be factored into any cost comparison.

Demonstrations

One farmer who has demonstrated such savings is John Finlay of Ballycuddy, Ballacolla, Co Laois.

At a recent Teagasc demonstration on his farm, John explained how he had saved over €44 per acre (€108/ha) on fertilizer costs on a silage field. This saving does not include the slurry spreading cost.

» Continued on next page



As the content of the solids increases, the fertilizer value rises too



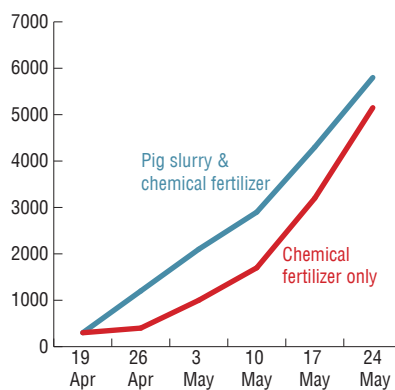
» From page 23

The field was divided into two plots. The first plot received chemical fertilizer only (four bags of 0:7:30 and two bags of CAN) on 22 April. The second plot received 2,500 gallons of pig slurry per acre on 15 April and the nutrient supply was balanced with chemical fertilizer (two bags of 0:7:30 and two bags of CAN) on 22 April. Both plots received the same total level of nutrients.

The pig slurry was applied one week before the bagged fertilizer to ensure no loss of N through de-nitrification. Grassland measurements revealed that the plot which received pig slurry had the same dry matter production as the plot which received chemical fertilizer only. The financial savings were a result of the reduced chemical fertilizer applied to the plot that received pig slurry, and taking into account the cost of transporting the pig slurry.

Gerard Coughlan of Ballycoughlan, Innishannon, Co Cork, has also

Figure 1
Grass dry matter results on Gerard Coughlan's farm



substituted chemical fertilizer with pig slurry. Again, one plot received chemical fertilizer only (three bags of CAN and three bags of 0:7:30 per acre) on 26 April. A second plot was given 2,500 gallons of pig slurry on 19 April, followed by a reduced level of chemi-

cal fertilizer (i.e. 1.3 bags of CAN and 1.6 bags of 0:7:30 per acre) on 26 April.

A saving of €53 per acre (€130/ha) was achieved based on reduced chemical fertilizer purchases. The slurry transport cost was reduced in this case as the farmer's own transport was used and the piggery was local.

Grass dry matter was measured weekly on the Coughlan farm and both plots produced similar yields on 28 May (which was the date of both the farm demonstration and the date of silage harvesting on this farm). The dry matter yield on the Coughlan farm is shown in Figure 1.

A grass yield of 6,000kg DM/ha (or 2,428kg of DM per acre) is equivalent to 30t of silage per hectare on a fresh-weight basis (or 12.1t of silage per acre). Grass samples were taken on the Coughlan farm on 24 May 2014 and analysed for feeding value. The results are shown in Table 2. These measures of grass quality show that using pig slurry can generate financial savings without compromising silage quality or yield.

Farmers at the Ballacolla farm walk in Co Laois.



Stan Lalor (Teagasc, Johnstown Castle), Fergal Coughlan (Teagasc, Moorepark), Gerard McCutcheon (Teagasc, Oak Park) at the Innishannon farm walk.



Host farmer Gerard Coughlan at the Innishannon farm walk.

Table 2: Feeding value of grass as sampled on 25 May on the Coughlan farm

	Dry matter digestibility	Water soluble carbohydrate	Crude protein	Buffering Content
Plot 1: Pig slurry	78%	14%	19%	38%
Plot 2: Fertilizer only	80%	15%	21%	37%

Soil fertility and crop yields

Stan Lalor from Teagasc, Johnstown Castle, spoke at both field demonstrations and explained the need for soil sampling to manage the growth of any crop.

Stan pointed out that only 10% of samples sent for analysis are showing that they are correctly balanced for P, K and lime requirement.

He added that a recent Teagasc survey showed that only 40% of farmers who have soils tested use the soil sample results to decide what fertilizers to use.

This means that 60% of farm crops are either oversupplied with nutrients (N, P, K and lime) in which case money is wasted on fertilizer, or crops do not receive enough nutrients – and crop yields suffer.

An increasing number of soil samples in recent years are showing depleted levels of P, K and a greater lime requirement. This is another reason to go back to using soil sampling as the basis on which to make decisions on fertilizer use.

Making a plan

All decisions in relation to any type of fertilizer use must be in compliance with the EU Good Agricultural Practice for Protection of Waters Regulations (often referred to as the “Nitrate” regulations).

These regulations have been reviewed and updated, giving some flexibility to farmers using pig slurry. The new Statutory Instrument (SI 31 of 2014) came into effect on 31 January, and will be in place for the years of 2014 to 2017.

In order to determine how much pig slurry a farmer may use, it is important to know the following:

- The area of the farm,
 - The organic stocking rate,
 - The crops to be grown,
 - The nutrient status of the soil (a soil P of Index 3 may be assumed if there are no soil sample results available),
 - The proposed chemical fertilizer usage, and
 - The tonnes of concentrate feed given to grazing animals the previous year.
- How much pig slurry a farm may

Facts & figures

Importance of Irish pig sector

- Approximately 7,000 are employed in total, including associated sectors, such as feed manufacture, haulage and services.
- 2,000 people are employed in pigmeat processing.
- Ireland exports around €800,000 worth of pigmeat per day.

Did you know?

- Ireland is approximately 140% self-sufficient in pigmeat.
- The average size of a pig farm in Ireland is 500 sows (i.e. for a farm with more than 20 sows on it).
- There are just 300 sow herds in the country now (i.e. with over 20 sows).
- Each sow produces 24.5 pigs per sow per year.
- The length of pregnancy in pigs is three months, plus three weeks and three days.
- A piglet more than doubles its weight in the first 10 days of life.
- Each year, each Irish person eats an average of 36.5kg of pigmeat.
- Pigs can only sweat through their snouts.
- Pigs wallow in mud to regulate their body temperature.

use will be determined by the limit of 170kg organic N/ha on the whole farm. How much P is required may be the next limiting factor. If a farm is using chemical P, it will greatly reduce the potential to use pig slurry on the farm. The amount of concentrate fed to grazing animals in the previous year must also be factored into the calculation.

Plan ahead

Preparing a plan to substitute chemical fertilizer with pig slurry early in the year is important to ensure compliance with the Nitrate regulations. Working with your agricultural adviser/consultant to ensure compliance with these regulations makes good sense and doing it early in the year can result in substantial savings.

More details

For more details on using pig manure as a fertilizer or to be put in contact with a local pig farmer, please contact your local pig adviser at <http://www.teagasc.ie/pigs/staff/>

Wendy Conlon

Equine specialist, Teagasc Rural Economy & Development Programme

The strategy most commonly spoken of when worming horses is regular de-worming every four to six weeks. This strategy was devised at a time when large redworms were a major problem. These are now rare in horse populations and small redworm are now the parasite of concern in adult horses, particularly encysted small redworm. Tapeworm, recognised as a potential cause of colic in horses, is another concern. The strategies that were effective to deal with large redworms are not effective against these parasites.

To achieve good parasite control, start by preventing contamination of the environment of a horse or horses with high numbers of parasite eggs and larvae. So treatments need to be timed to kill worms before they start to pass large numbers of eggs into the environment.

The goal of parasite control should never be to completely eradicate any given parasite. Firstly, this is impossible and secondly, an inevitable result is the accelerated development of parasite resistance to drugs.

The goals of parasite control are:

- To minimise the risk of parasite disease;
- To control parasite egg shedding;
- To maintain effective anthelmintic control;
- To avoid further development of anthelmintic resistance as much as possible.

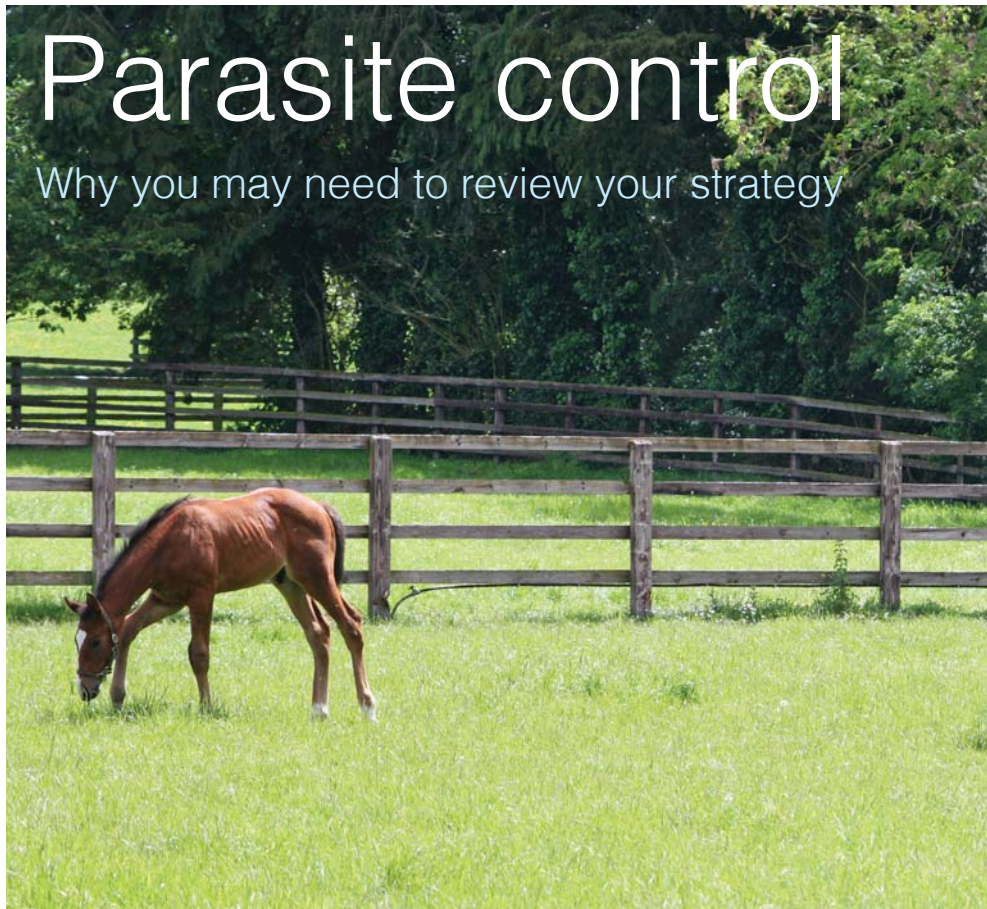
To achieve these goals it is important to know the degree of egg shedding by individual horses. This information can only be generated by performing periodic faecal egg counts where a sample of faeces is forwarded to a laboratory such as the Irish Equine Centre (IEC) for assessment. Faecal egg count test is currently €13 per sample with the IEC. The egg shedding status of a horse may change over time as a result of changes in the horse's immune status and level of parasite exposure. Faecal egg count surveillance is necessary to properly develop and monitor any parasite control programme.

Deworming programmes for adult horses should be designed with the following principles in mind:

- Evaluate the effectiveness of the de-wormers used at least every three years using a faecal egg count reduction test (a faecal sample is collected and analysed prior to deworming; the anthelmintic in question is administered; and a faecal sample is collected 14 days following treatment. The percentage reduction in the number of eggs is calculated and used to make

Parasite control

Why you may need to review your strategy



assumptions regarding the presence or absence of drug resistance).

- Strategic treatment is the preferred option to regular deworming for the autumn/winter/spring period.
 - An autumn larvicidal (Oct/Nov) and spring (Feb/Mar) dose is given to all horses which aims to kill encysted small redworms which are not readily detectable in the faeces (Benzimidazoles/Moxidectin).
 - Annual treatment for tapeworms at the end of the grazing season (double dose of Pyrimidine or any Praziquantel drug).
- All further treatments over the grazing season should be targeting horses with high faecal egg counts (more than 200 to 300 eggs per gramme) and rotating the chemical group being used for these treatments on an

annual basis to avoid problems with resistance.

Foals, weanlings, yearlings

Horses less than three years of age require special attention as they are more susceptible to parasite infection and are more at risk of developing disease. Roundworms are a major parasite of concern in foals and weanlings.

Targeted treatments based on faecal egg counts are not recommended in these age groups. Instead, during the first year of life foals should receive a minimum of four anthelmintic treatments. First deworming should be carried out at about two to three months of age, and a benzimidazole drug is recommended to ensure efficacy against roundworm. Second, de-

Anthelmintic effectiveness against various parasites:

Drug	Effective Against
Ivermectin	Roundworms; Large Redworm; Small Redworm; Bots; Pinworms; Lungworms; Stomach Worms; Threadworms
Moxidectin	Roundworms, Large Redworm, Developing and Encysted Small Redworm, Bots, Intestinal Threadworm, Pinworm, Stomach Worm
Pyrimidines	Roundworms; Small and Large Redworms; Pinworms; Tapeworms at double the normal dose
Benzimidazoles	Roundworms; Small and Large Redworm Encysted Small Redworm – Panacur Equine Guard 5 day course
Praziquantel and Ivermectin	Tapeworm; Roundworm; Large and Small Redworm; Bots
Moxidectin and Praziquantel	All stages Small Redworm; Roundworms; Bots; Tapeworm
Praziquantel	Tapeworm



Chemical groups of anthelmintics available:

Chemical group	Chemical	Brand examples
Macrocyclic Lactones	Ivermectin	Eqvalan; Eraquell; Vectin; Furexell;
	Moxidectin	Normectin; Bimectin; Equest
Tetrahydroimidines	Pyrantel	Strongid P; Pyratape P; Embotape
Benzimidazoles	Fenbendazole	Panacur; Telmin
	Mebendazole	
	Oxibendazole	
Praziquantel	Praziquantel	Equitape
	Moxidectin and Praziquantel	Equest Pramox
	Praziquantel and Ivermectin	Equimax; Eqvalan Duo

Dosage Intervals and points of note for different chemicals/brands:

Drug	Dosing interval	Product brand names			
Ivermectin	8-10 weeks	Eqvalan	Eraquell	Vectin	Furexel
		Noromectin	Bimectin		
Furexel/ Noromectin can be used to treat lungworm in horses/ponies/donkeys; Eqvalan and Vectin safe in pregnant mares and young foals; Eraquell may be used in pregnant mares					
Moxidectin	13 weeks	Equest	Not for use in foals less than 4 months		
Benzimidazole	6-8 weeks	Panacur	Telmin	Suitable for mares and foals	
Pyrimidines	4-6 weeks	Strongid	Pyratape	Embotape	
Praziquantel		Equitape	Used in conjunction with Equest. Not for foals less than 2 months (tapeworm unlikely at this age)		
Praziquantel & Moxidectin	13 weeks	Equest Pramox	Not for use in pregnant and lactating mares; not for use in foals less than 6.5 months		
Praziquantel & Ivermectin		Equimax	Eqvalan Duo	Safe in pregnant and lactating mares and foals from 2 months of age	

worming is recommended just before weaning (approximately six months of age). An extra treatment can be justified before weaning if the time period between the two treatments is greater than three months.

At weaning faecal egg counts are recommended to determine whether worm burdens are mainly redworms or roundworms, to enable the right choice of anthelmintic. Third and fourth treatments should be considered around nine and 12 months of age respectively, and treatment should mainly be targeting redworms. Tapeworm treatment should be included on one of these latter treatments.

Perform a faecal egg count reduction test yearly to evaluate the efficacy of anthelmintics against redworms and

roundworms. It is wise to de-worm mares using benzimidazoles or macrolytic lactones just before foaling to prevent transmission of threadworm through the milk. But if the mare was treated during the spring with a macrolytic lactone there is little justification for repeating the treatment.

Recently weaned foals should be turned out on to the 'cleanest' pastures with the lowest parasite burdens. Yearlings and two-year-olds should continue to be treated as 'high' shedders, and receive about three to four yearly treatments.

Grassland management

Proper composting of manure is an effective practice in eradicating parasites. Non-composted manure

should never be spread on pasture as this increases the level of parasite contamination.

Removing droppings from pasture is also very effective in preventing further infestation of horses grazing it.

Leaving pasture unoccupied for several months of the year may or may not reduce the risk of infection, depending on the time of the year. Infective large redworm larvae can survive for only a few weeks in hot weather, but for as many as six to nine months during colder weather.

Grazing infected pastures with cattle, sheep or goats assists in parasite control also as the larvae are host-specific and cannot infect these animals and are destroyed when they are ingested by the sheep or goats.

General points

- Do not under-dose horses and foals; use weight tapes or scales to determine body weights.
- Consider using blood test (ELISA) submitted on at least 20% of resident horses to determine exposure potential for tapeworms.
- Design a parasite programme that considers the farm's management practices:
 - Control stocking density: Heavy stocking rates result in a consistently high level of parasite exposure and can challenge even the best deworming programme.

- Age of horses on the farm: are there foals/ weanlings/ yearlings and or/ mature adults? Treat youngsters as high shedders.
- Deworm new arrivals before turnout with resident horses and keep in for 48 hours after dosing.
- 'Clean up' using non-chemical means such as pasture rotation, mixed grazing with other animals, manure removal and composting.

If presented with a horse showing evidence of parasite disease during the times of the year when treatments

are not recommended, then this horse should still be treated – and if the horse is showing symptoms of internal parasites then moxidectin would be the treatment of choice since it is important to kill encysted larvae in these animals. Ultimately each farm (with veterinary guidance) should develop its own programme tailored to the specific needs of the farm and each animal. There is no such thing as a 'one size fits all' programme.

Lungworm, lice and liver fluke may also need to be addressed. Speak to your vet.

Getting set for on-farm inspections

A Teagasc workbook has proven highly popular but feedback is welcome

Tim Hyde,
Teagasc Crops Environment
and Land Use Programme

Up to 5,000 farmers attended practical cross-compliance events organised by Teagasc in 2013. The farmers attended 75 short courses and 80 general/public cross compliance meetings. Christy Byrne, of Teagasc Galway, focuses on cross-compliance delivery to Teagasc clients in the east of the county.

"Since 2012, 260 farm families have attended cross compliance courses in Galway East. The response to these events has been positive and people appreciate both the indoor and outdoor sessions," says Christy. "The workbook is also very popular."

You can contact your local Teagasc office for more information on cross compliance and the workbook is available to all Teagasc clients at local Teagasc offices or from Teagasc Publications, Oakpark, Co



Carlow at a cost of €5/workbook for orders of 50 or more; or it can be downloaded at http://www.teagasc.ie/publications/view_publication.aspx?PublicationID=1896

Catherine Seale, REDP, Teagasc Athenry, is a Teagasc Walsh Fellow, who is pursuing a collaborative project between Teagasc and the Open University assessing the practicality of the cross-compliance workbook and associated training – from the farmer's point of view.

Catherine attended a number of cross-compliance training events last year in Galway, Longford, Roscommon, Donegal, Laois, Carlow, Cork and Limerick, as well as the Ploughing Championships in order to ask farmers about their thoughts and ideas on the cross-compliance workbook and training. In total, 196 farmers from the sheep, tillage, dry stock and dairy sectors gave feedback.

Overall, the workbook and training has been well received with farmers quoting that: "The booklet is a very practical tool to use when assessing your own farm requirements. It can be used to prioritise what has to be done, what should be done and what could be done." This was a typical comment. However, if you have any suggestions or comments on the workbook, please contact:

*Catherine Seale,
Rural Economy & Development
Programme, Teagasc Mellows
Campus, Athenry, Co Galway.
Tel: +353 91 845270
catherine.seale@teagasc.ie*



A group of Galway farmers attending the five-hour cross compliance course run by Christy Byrne of Teagasc, Galway.



Inspection notification

One of the questions most frequently asked by farmers is: What notification is a farmer entitled to in relation to farm inspections by the DAFM?

- The regulations require that no notification is permitted for inspections relating to food hygiene (SMR 11), feedstuff (SMR 12) and welfare of calves and other animals (SMR 16 and 18). For unannounced inspections, before the start of inspection, the Department will provide the farmer with a card giving details regarding the notice for inspection, as outlined above, and providing the farmer with the opportunity to postpone elements of the inspections for 48 hours, or 14 days, as appropriate.



Compliance tips

- In REPS, silage bales may not be stored more than 2m high, but this is not a requirement under cross-compliance. However, any effluent leaks from round bales must be collected. Bales that are leaking and no effluent collected will incur a penalty.
- Round bales cannot be stored within 20m of any dry drain, stream or river. This includes any drain/ditch/dike that may or may not convey water.
- Do not store waste silage or farm-yard manure in the silage pit. Rain coming off silage plastic is clean (provided no FYM is put on top of the plastic) and can be diverted to clean water outlets and preferably not directly to streams/water-courses.
- When covering the pit, plastic should extend over channels. Rain coming off the plastic can then be directed to a clean water outlet. If clean water is collected with silage effluent, it adds unnecessarily to storage and disposal requirements. Where the pit is opened at the high end, rain on the plastic is directed away from the feed face to the clean water system. This reduces the volume and, also, the dilution at the feed face end. Rain on self-feed silage areas, where animals stand, must be collected with their manure.
- The face of the silage pit must be kept clean and a clean tidy feed face reduces the risk of run-off. It's surprising how large a volume of rainfall comes off silage pits but if the silage apron regularly cleaned, the rainwater runoff will be regarded as clean water.



This silage pit used in a cross-compliance demonstration shows an acceptable standard of cleanliness on the left but the area on the right does not meet the required standards for inspection.

• Where no one is present when an inspector arrives unannounced, he/she will return again. If there is no one present at the second visit, the inspector will ring the applicant and inform him/her that he/she has been selected for inspection and that the inspection will be carried out on the food hygiene, feed and welfare checks there and then.

The inspector will offer the option to the applicant to complete the remaining elements of inspection within 48 hours or immediately if that is the wish of the applicant. Where no contact can be made, the inspector will proceed with the unannounced elements taking due regard of all

health and safety issues and leave a note indicating the nature of the call, together with contact details and confirming that a return visit will be made within 48 hours to complete the inspection.

• The notification requirement for inspections relating to identification and registration of animals: cattle (SMR7/8) and sheep (SMR8a), pigs (SMR 6), can be up to 48 hours where such notice does not jeopardise the objective of the inspection.

• The notification requirement for inspections relating to birds (SMR 1), groundwater (SMR 2), sludge (SMR 3), nitrates (SMR 4), habitats (SMR 5), pesticides (SMR 9), animal health

(SMR 13,14,15) and GAEC can be up to 14 days where such notice does not jeopardise the objective of the inspection.

• The notification requirement for inspection for ground eligibility can be up to 14 days, where such notice does not jeopardise the objective of the inspection.

• DAFM may give no notification at all, or up to 14 days, depending on the regulations being inspected.

Notification can only be given "where such notice does not jeopardise the objective of the inspection". It is important that all records as required are maintained and available for inspection.

Avoid deadly farm dangers

John McNamara,
Health and Safety Officer, Teagasc

By the end of May this year, there had been 13 accidental deaths on farms. This is a 70% increase on past trends and represents a worrying upward spike in a long-term downward trend. Preventing accidents needs urgent attention if we are to continue reducing the unnecessary loss, pain and suffering, which accidents bring.

Minister of State at the Department of Agriculture Tom Hayes, along with IFA and Macra na Feirme presidents Eddie Downey and Kieran O'Dowd launched a Call for Action poster at the health and safety stand at the recent Teagasc Beef 14 event and urged everyone in the farming sector to give safety first priority. "Adopting safe behaviours and implementing sound controls are crucial to preventing accidents," he said. "Everyone's active and ongoing involvement in accident prevention is the vital ingredient to improve the safety record of the sector."

Accidents in 2014

Among the farm deaths so far in 2014, eight were associated with a tractor, farm vehicle or machinery, three were associated with livestock handling and a further two were due to being crushed by falling objects.

Accidents with tractors and machines typically involved being struck or crushed.

Exceptional vigilance is necessary when vehicles are operated in the presence of bystanders.

Ten-year trends

The 10-year trend in farm deaths shown in Figure 1 indicates that vehicles and machines (46%), animals (14%), drowning and gassing (11%), falls (11%), collapses (7%) and wood-related – mainly timber felling – (7%), are the main accident causes. An accident occurs when energy is imparted to a person from a source such as a blow from a vehicle or an animal. Accident prevention requires constant vigilance to prevent such situations occurring.

Vehicles and machinery

Particular attention is needed when parking vehicles to prevent "run-away", which can happen on even the slightest of slopes and result in crushing of the driver or others.

The key precautions are:

- Stop the engine; leave the fuel-control in the shut-off position; remove the key.
- Apply the handbrake securely.
- Park on level ground, where possible. Leave the vehicle in gear. If parked on a slope, leave the vehicle in reverse gear if facing downhill and a low forward gear if facing uphill.
- Use wheel stops, if necessary, to prevent a vehicle rolling from its parked position.
- As vehicles vary in their operating procedures, always follow the hand-book instructions.



There has been a notable reduction in PTO and power-drive fatalities in recent years. Thankfully there have been none in the last three years.

However, due to the gruesome nature of these accidents, all necessary precautions should continue to be taken. This includes complete covering of powers shafts and ensuring that the O and U guards are in place.

The majority of accidents with PTOs occur when the machine is stationary. Take particular care with slurry tankers, slurry agitators or grain rollers. Ensure that the power-shaft is completely covered and adopt a work procedure so that you don't have to work near the rotating PTO shaft.

Figure 1
Major causes of farm deaths
(2004 to 2013)

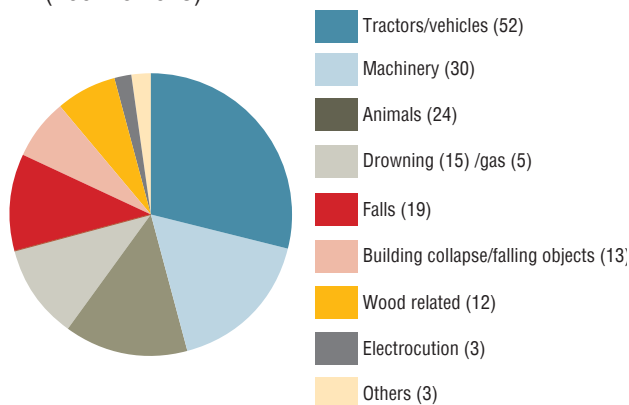
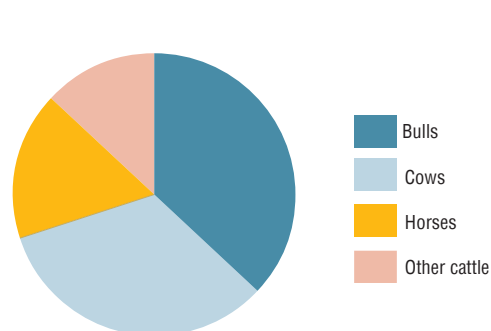


Figure 2
Livestock fatalities
(2004 to 2013)





Other key findings

- Dairy farming accounts for the highest share of farm deaths, one third, while employing just one eighth of the agricultural workforce in 2010.
- The majority of fatal accidents occur between 9am and 6pm, with the most dangerous hour between 11pm and 12pm.
- The level of farm fatalities was higher in the Midwest (Clare, Limerick and North Tipperary) and Midlands (Laois, Longford, Offaly and Westmeath) regions when compared with the farm workforce. Both regions had 16% of the national fatalities but just 11% of the national farm workforce.
- One in eight farm deaths were people aged 14 or younger, four in 10 were aged 60 or older, with the fatality rate increasing with age. The young and the old therefore make up more than half of all fatalities.



Macra na Feirme president Kieran O'Dowd; John McNamara, Teagasc; Martin O'Halloran, CEO, HSA; Minister Tom Hayes; IFA president Eddie Downey; Teagasc director Prof Gerry Boyle; and Maura Canning, IFA Farm Family Committee chair.

Livestock

A notable recent trend with livestock accidents is a rise in the number of fatal accidents associated with freshly calved cows. There are now almost as many cow-related accidents as there are for bulls. Those working with cows should take a range of protective measures, including adapting facilities to minimise contact with newly-calved cows.

Culling animals showing aggression and breeding for docility also helps to reduce the risk. We should never forget that despite thousands of years of domestication, a cow's instinct is to react aggressively if she perceives any threat to her defenceless calf.

There has also been a rise in fatal

accidents associated with the handling of horses. DVDs showing safe practices when working with cattle and horses are available on the Teagasc YouTube channel.

Trends in fatal farm accidents

An analysis of fatal farm accidents since 1993 was recently undertaken by Megan Clinton as her final-year project for a degree in Management Science and Information Systems Studies at Trinity College Dublin.

The project was supervised by David Meredith, REDP, Teagasc and Professor Myra O'Regan of TCD.

The study found that:

- The proportion of fatal accidents in the agriculture sector as a percentage

of the working population has increased dramatically since 2009 (Figure 3). So, farming is falling behind other sectors in reducing accidents.

- Fatal farm accidents rise steadily from April to July and then decline with further peaks occurring in January and March.

- Fatal accidents rise steadily as the week progresses and peak on Fridays. They remain high over the weekend. Unsurprisingly, the study recommends that farm safety campaigns and promotions be aimed at high-risk groups and situations.

Further information on farm safety can be obtained on the websites www.teagasc.ie/health_safety/ or www.hsa.ie

Figure 3

Proportion of fatalities that occurred in agricultural sector

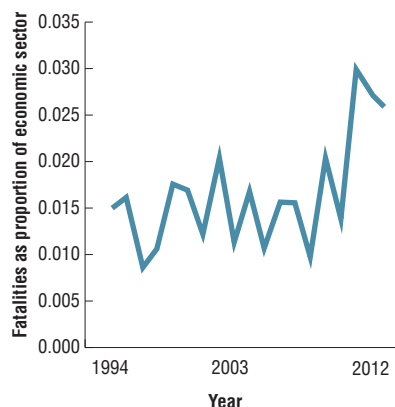


Figure 4

Frequencies of fatalities

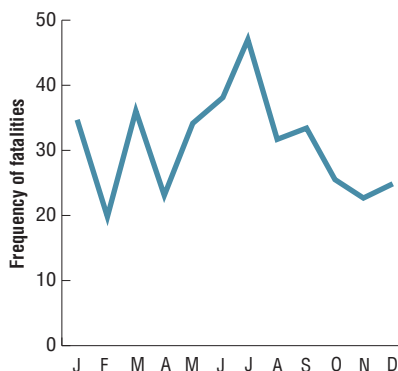
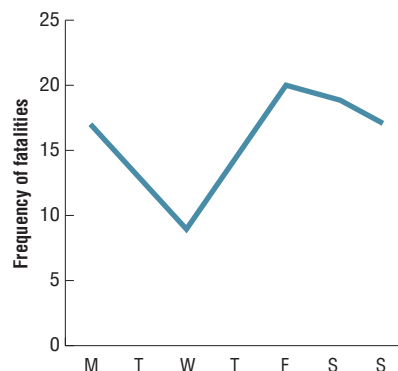


Figure 5

Fatal accidents by day of the week



Set goals for four-year-old plantations

The early years of a forest are vital for long-term success

Noel Kennedy,
Forestry Development Officer,
Roscommon, Teagasc Crops,
Environment and Land Use Programme

Every year, hundreds of land-owners plant millions of trees under the Afforestation Grant and Premium Scheme. These small trees face many challenges to their survival before they become established and grow into timber producing trees.

The second installment (25%) of the total afforestation grant is allocated towards maintaining the young trees, and is paid four years after planting subject to satisfactory establishment of the plantation. If a plantation is not well maintained, owners can be penalised by delayed afforestation grant and forestry premium payments, as well as additional maintenance costs. More importantly, future tree quality and timber revenue is likely to be reduced.

The management and essential care of young forests was the focus of a recent nationwide series of forest walks organised by Teagasc, in association with the Forest Service and the Department of Agriculture, Food and the Marine.

The walks concentrated on the four most common areas of maintenance required to achieve successful forest establishment:

- Vegetation control
- Tree stocking
- Tree nutrition
- Broadleaf shaping

Vegetation control

Competition from grass and weeds is a huge problem for small trees and effective weed control is crucial on most forest sites. Poor weed control is the most common cause of poor tree

Table 1: Live trees at 100% stocking

Species	Trees req/ha*	Trees req/8m plot
Sitka spruce, Norway spruce, Douglas fir, larch species	2,500	50
Alder	2,500	50
Ash, sycamore, oak, beech, other broadleaves	3,300	66

*From January 2011

performance and plantation failure at year four. The objective of vegetation control during the maintenance period is to tip the balance in favour of the trees in the competition for light, water and nutrients. Chemical control using herbicides is the most common and cost-effective approach.

Manual control is also useful after the growing season when taller weeds, such as nettles, bracken, thistles, rushes and woody weed, may threaten the survival of small trees over the winter.

➔ **Year 4 objective:** Trees are free growing and clear of vegetation competition.

Sustainable Use Directive

Forest owners should note that the new Sustainable Use Directive (SUD) may have implications for the use of herbicides and other pesticides in their plantation management.

The SUD is a new EU directive governing all aspects of pesticide use, which is being implemented in Ireland by the Department of Agriculture, Food & Marine. The overall aims of the SUD are:

- Reduce the risks and impacts of pesticide use on human health and the environment.
- Promote the use of integrated pest management (IPM) and of alternative approaches or techniques to pesticides. For further information about SUD, please see: www.pcs.agriculture.gov.ie/SUD.htm

Tree stocking

Tree mortalities can occur in young plantations and it is important that



the trees are replaced or “beaten up” as early as possible. The afforestation grant requires that at least 90% of the trees should be established by year four. Ideally, tree stocking should be maintained at 100% to optimise plantation development, maximise timber production and avoid unnecessary additional maintenance costs.

If the tree stocking numbers are too low, the Forest Service may delay or refuse the second installment grant and premium payments could also be affected.

➔ **Year 4 objective:** Minimum 90% of original stocking still alive, trees at approved spacing and evenly distributed.

Tree nutrition

The nutrient requirements of trees are low compared with agricultural crops. However, trees planted on certain soil types, in particular Peats, can develop nutrient deficiencies resulting in slower growth and reduced timber yields.

At year four, if trees exhibit adverse growth symptoms that are possibly nutrient related, application for the second installment of the afforestation grant may be delayed subject to the identification and correction of the problem.

The most common symptoms of nutrient problems are changes in the colour of leaves and needles and reduction in needle length/leaf size. However, it is important to remember that other factors apart from nutrients can produce similar symptoms such as poor drainage, frost, etc.

➔ **Year 4 objective:** Trees have



A young plantation well on its way to establishment by year four.

FARMER PROFILE

Roscommon farmers Mary and Diarmuid McCarthy planted a 16ha outfarm in spring last year. The land is good mineral

upland and the McCarthys have high expectations for the Norway spruce and Sitka spruce that will make up the commercial backbone of the plantation.

To get the trees off to the best possible start and protect their longer term forest investment, they have signed a four-year forest maintenance contract with the forestry company who organised the planting.

"It is important for a forest owner to keep an overall view of the plantation and communicate any concerns to your forester," Diarmuid advises. Diarmuid is taking a keen interest in the early progress of the trees and ensures he has regular contact with his forester, Michael Moran of SWS Forestry.

To learn more about forest main-

tenance, he has both hosted and attended Teagasc events on the early management of plantations. "I got a better understanding of different maintenance issues and that maybe I was a little too concerned about particular situations."

Michael Moran agrees that it is important to get the maintenance balance right but that feedback from clients if they have concerns is welcomed and more general information sharing between forester and client is really worthwhile.

At the moment, chemical grass cleaning has taken over from planting replacement trees as the priority maintenance operation.

Over the four-year contract, annual maintenance programmes will set out the work required but should be at their busiest in the first couple of years. On some sites, there may be additional works towards the end of the maintenance period, including shaping of broadleaves, remedial fertilisation and access and firebreak maintenance.

healthy appearance in terms of colour and vigour.

Broadleaf shaping

Shaping is the process of removing forks and large competing side branches in broadleaf trees in order to produce long straight lengths of timber for high value markets.

Failure to shape is likely to result in poor quality trees in the longer term and so an initial shaping is a requirement for the second installment of the afforestation grant at year four.

The principles of shaping are straightforward and some owners may choose to carry out the initial shaping themselves. However, if the plantation is under a maintenance contract, this should be discussed in advance with the forester.

➤ **Year 4 objective:** All broadleaf plots to have received an initial shaping. Growing quality plantations begins at planting but it is the next four years that will influence the potential, quality and value of the mature forest. Forest owners should take an active role in the management of their forests. By informing themselves about maintenance requirements, walking their plantation regularly and having a proactive relationship with their forester, they can ensure the implementation of a focused and effective maintenance programme. By year four, the objective should be to have a healthy plantation that ticks all the boxes of the second installment of the afforestation scheme.

Diarmuid McCarthy (right) and his forester Michael Moran checking vegetation competition in a one-year-old Norway spruce plantation.



Other issues

Young plantations can also experience damage due to frost and animal grazing.

Frost

Severe winter cold rarely damages young trees in Irish forests. However, late spring and early summer frost can occasionally cause damage to tender new growth.

There is a rapid full recovery in most cases but where there is severe damage and tree loss approaching year four, application for the second installment of the afforestation grant may be delayed until remedial works, if required, are carried out.

➤ **Year 4 objective:** Satisfactory growth recovery and stocking levels following any frost damage.

Animal browsing

A requirement of the afforestation grant is that the plantation boundary is stock proof. It is important to regularly check

that fences and gates are intact to prevent trespass by cattle, sheep, horses, rabbits, goats and deer. Regular trespass can cause serious long-term damage to both trees and plantation.

Sporadic damage to broadleaf trees, in particular by hares, is common but will lessen considerably as site vegetation develops. Many damaged trees recover but some replacements are likely to be required before year four to maintain tree stocking levels.

➤ **Year 4 objective:** Plantation boundary is stock proof with no evidence of animal trespass.

Fire control

Plantations that are considered vulnerable to fire may have had firebreaks constructed along some boundaries.

Firebreaks should be free of vegetation at year four to maintain their effectiveness.

➤ **Year 4 objective:** Firebreaks kept free of vegetation.

>> For details and downloads, please see www.teagasc.ie/forestry

Looking after your little trees

Transplanting is a challenging time for young trees. Extra care will ensure more survive and thrive, writes **Eileen Woodbyrne**, from the Teagasc College at the National Botanic Gardens

I recently found myself in a DIY store in which I saw a row of bottles of pruning paint, claiming to “seal and heal pruning wounds on all types of trees”. Painting such solutions onto pruning wounds has been shown to deliver no benefits – and may actually facilitate decay by creating a moist environment behind the wound in which decay-causing fungi can thrive.

An exception to this relates to cherries, plums and related trees, which are susceptible to a fungal disease called silver leaf.

Some people recommend painting fresh pruning wounds on these trees, but the more common approach is to prune them in summer when the fungal spores are not around and the trees are better able to respond to the pruning and seal the wounds by themselves.

Tips

Here are some more tree-care tips:

- When buying young trees, pay careful attention to the root system. Bareroot trees should have a well developed lateral root system, ideally having at least four major lateral roots. Trees in pots should have enough fibrous roots to hold the compost ball together when the container is removed, but should not have any major circling roots (minor roots that are beginning to circle can be trimmed off at planting).



A well-chosen, correctly planted and well maintained tree has the potential to make an enormous aesthetic and environmental contribution for generations to come.

- Don't plant too deeply. Common practice has been to plant to the nursery mark (a darker area on the stem that shows you the level of the soil when the plant was growing in the nursery).

However, this may not always be appropriate. In the nursery, soil may be mounded up around the base of the stem (e.g. when plants are being undercut to encourage fibrous root growth, or when field-grown plants are lifted and put into containers).

- If you plant to the depth of this new soil mark, you are planting too deeply. Look at the base of a young tree and you should see an area where the stem base becomes thicker at the point where the roots emerge from the trunk. This is known as the “root flare” and the golden rule is that the root flare should be visible at the soil surface after planting. This may mean removing some soil from the top of

the root-ball or container before you plant.

- Traditionally, we have been advised to break up the soil in the sides and base of a tree pit when planting, to make it easier for the roots to escape into the surrounding soil. In most cases, however, breaking up the soil in the base of a pit is not necessary. Too much disturbance of the base of the pit will cause the soil (and the tree) to settle after planting, meaning that it is ultimately planted too deeply.

Again, there is an exception to this. If the subsoil is compacted to the extent that drainage may be impaired, a more radical solution involving breaking up deeper layers will be required.

- Finally, don't paint wounds. Trees have an efficient system of their own for sealing wounds and resisting the spread of decay and, in general, it is much better to let them get on with it.



Later-sown crops without sprays or BYDV. What's stopping you?

Do you rely on sprays to keep aphids at bay in crops like barley or wheat? There's a risk if bad weather stops you getting on the land.

That's why you should switch to Redigo Deter seed treatment. It gives extended BYDV protection and keeps timings flexible for post-em herbicides.

More and more farmers do a quicker, better job with Redigo Deter. Why not join them. Talk to your advisor or call Bayer Freephone: **1800 818 534**.

Redigo® and Deter® are registered trademarks of Bayer. Redigo Deter contains prothioconazole and clothianidin. Use plant protection products safely. Always read the label and product information before use. Pay attention to the risk indications and follow the safety precautions on the label. For further information, please visit www.bayercropscience.ie or call Bayer Freephone: 1800 818 534. © Bayer CropScience Limited 2012.



Bayer CropScience

RISPOVAL[®]

12 Month IBR Vaccine

**12 MONTHS
IBR COVER²**



**The Only Vaccine Range to offer 12 months
IBR immunity from a *single* booster!²**

RISPOVAL[®] **IBR**
Marker Live

RISPOVAL[®] **IBR**
Marker Inactivated

**Start Heifers on the 12 Month Programme NOW
by Vaccinating with Rispoval IBR Marker Live**

For further information please contact your veterinary surgeon or Zoetis, 9 Riverwalk, Citywest Business Campus, Dublin 24. Tel 01 467 6650. www.zoetis.ie

1. GfK Kynetec: Vet Trak Veterinary Sales Statistics. 2014.

2. *Animals over 3 months of age, initially vaccinated with a single dose of RISPOVAL IBR MARKER LIVE intramuscularly may be given a single dose booster of RISPOVAL IBR MARKER INACTIVATED to provide 12 months duration of immunity.*

Legal Category: **POM-(E)** Use Medicines Responsibly. www.apha.ie

zoetis[™]