

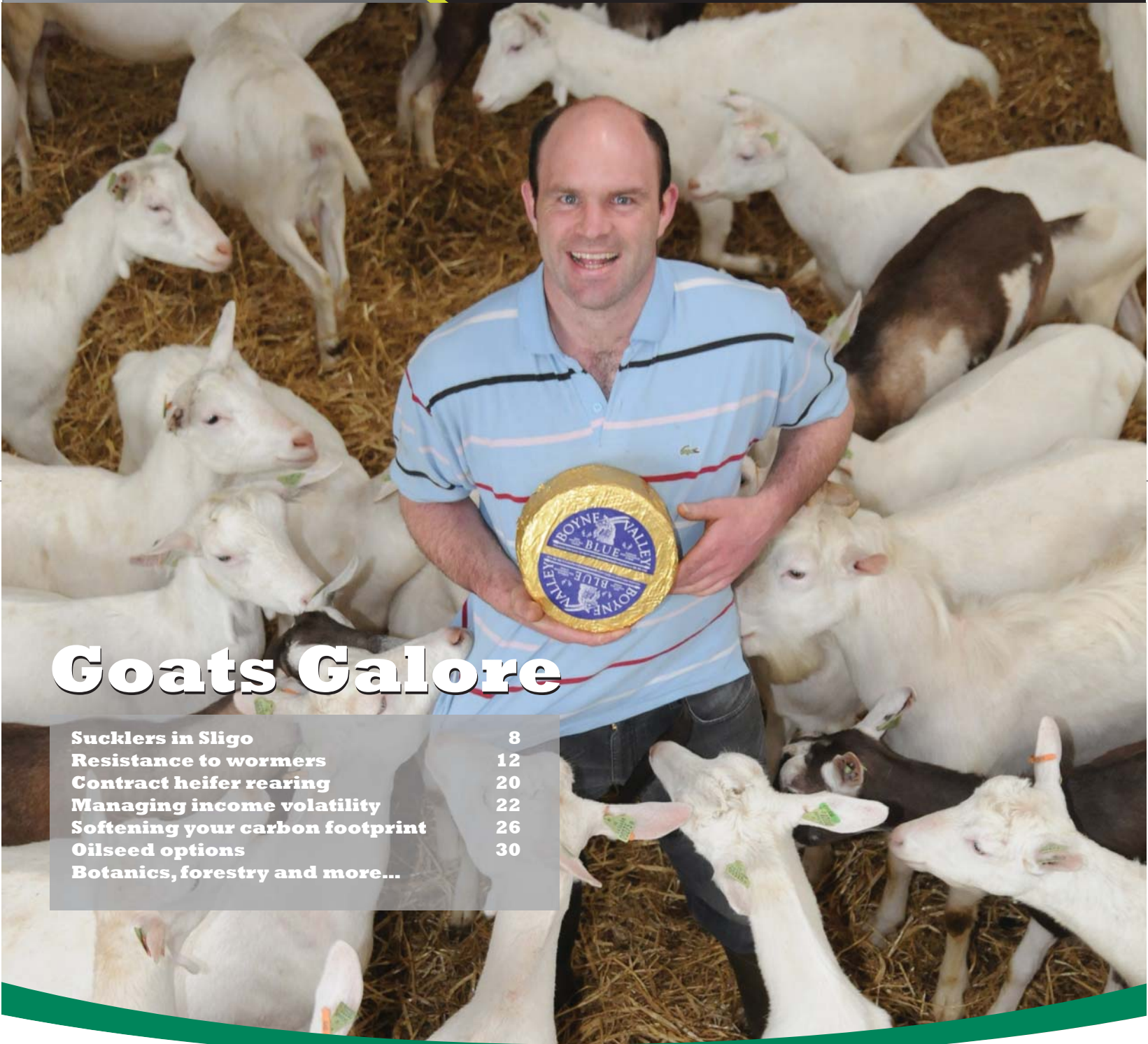
TEAGASC

July - August 2012 | Volume 23 | Number 4



Today's Farm

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



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Cover caption | Michael Finegan with a wheel of his Boyne Valley Blue goats' cheese. By developing the brand Michael has helped reduce the volatility in the price he receives for the milk from his 300 goats.

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*.

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COMMENT

Opportunity in goats



Mark Moore
Editor,
Today's Farm

If you have heard the 'goat' in the Bóthar ads asking 'are we there yet, are we there yet?' you may be sceptical about the species but goat meat and milk are low in fat, easy to digest and virtually free of allergens. Michael and Julia Finegan managed 2,000 dairy cow units in New Zealand before returning home to Navan where they now milk 300 goats and have developed a highly successful goats' cheese. Quotas and the cost of investing in dairy cows had prevented them from expanding the family dairy.

Goats are a great enterprise, and there is room for more producers, but they are a niche. Thankfully, the Finegans have not been lost to Irish agriculture completely but young people of this calibre will only stay here and take the industry to the next level if they can find fair and attractive opportunities coming up to and post-quotas. This may be one of the greatest challenges facing the industry.

Deis i ngabhair

Má tá an 'gabhar' sna fógraí de chuid Bóthar cloiste agat ag iarraidh 'an bhfuilimid ann fós, an bhfuilimid ann fós?' d'fhéadfadh go mbeifeá sceiptiúil faoin speiceas úd ach tá feoil agus bainne na ngabhar íseal i saill, éasca le díleá agus saor ó ailléirginí a bheag nó a mhór. Riar Michael agus Julia Finegan 2,000 aonad bó déiríochta sa Nua-Shéalainn roimh fhilleadh abhaile chun na hUaimhe dóibh áit a chrúnn siad 300 gabhar anois agus a bhfuil cáis ghabhair fíor-rathúil forbartha acu. Chuir cuótaí agus an costas infheistíochta i ndáil le ba déiríochta cosc orthu tionscal déiríochta an teaghlaigh a leathnú.

Is iontach an fiontar iad gabhair, agus tá spás le haghaidh a thuilleadh táirgeoirí, ach is nideog iontu féin iad. Ba cheart a bheith buíoch nár thréig muintir Finegan tionscal talmhaíochta na hÉireann go hiomlán ach is léir nach bhfanfaidh ógánaigh den chalabra seo anseo leis an tionscal a thabhairt chuig an gcéad chéim eile ach amháin más féidir leo teacht ar dheiseanna cothroma agus mealltacha ag druidim le agus i ndiaidh cuótaí. Tá seans go bhfuil sé seo ar cheann de na dúshláin is mó ag tabhairt aghaidh ar an tionscal.

A book of bird songs

Birdsong 150 British and Irish Birds and their amazing sounds

Jonathan Elphick, Jan Pedersen and Lars Svensson

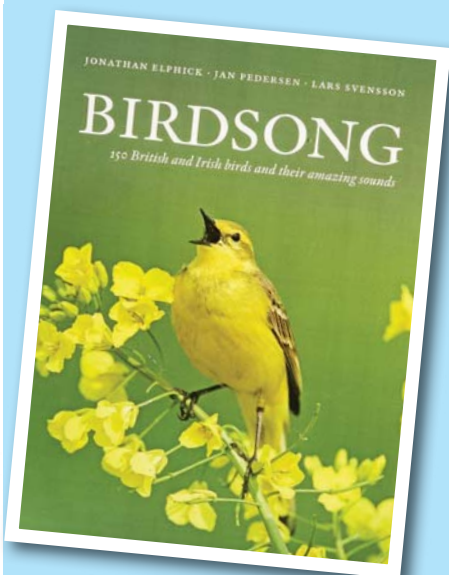
(*Quadrille*, 2012)

This is a book that sings, courtesy of its built-in sound module with a library of 150 bird songs, earning thus a valuable place on the farmer's shelf. Each of the birds is illustrated by a beautifully clear photograph from half to a full page in length and the accompanying text is precise and informative. At the top of each page, the bird's type of sound is listed (song or warning call for example) and a number for that sound.

Turn on the audio module at the side of the book and select that number for a digital recording. This may seem a little gimmicky but *Birdsong* is a quality book in every respect – audio, visual and textual – and the sound device (powered by three AAA batteries) is robust enough to handle continual use. I experienced the book's value on the very day it arrived in the post. Glimpsing and hearing a tiny bird in the hedge, I knew only it was a dunnock or a wren but listening to the two sounds in *Birdsong* clarified the matter; it was a wren, alarmed by my proximity.

Sean Sheehan

Birdsong, available in good bookshops, costs €24 from The Book Depository (www.bookdepository.co.uk) and this includes postage to Ireland.



Soft fruit industry grows by 190% in a decade

Irish consumers are now eating €35m worth of strawberries each year, with an increasing proportion of the fruit being produced in Ireland. The Irish soft fruit industry has grown by 190% in the last decade alone and the sector has been very resilient during the economic downturn.

Protected strawberry production is now the mainstay of the berry industry in Ireland. Growers have invested millions in new glasshouse technology to extend the growing season for Irish soft fruit. Most of the fruit grown is for home consumption but about 15% is exported to Britain each year. Teagasc research on strawberry tray plants has been vital for a number of strawberry plant producers in Ireland. They have increased their production over the last number of years and may be in a position to export in the future. This has allowed

Irish growers to reduce their reliance on imported plant material by at least 40%.

Teagasc soft fruit specialist Dr Eamonn Kehoe (right) said: "People realise the health benefits of eating fresh fruit and consumption is holding. Irish growers have responded by investing in new glasshouses to provide fresh fruit for a longer season. There are possibilities for savvy people who spot a lack of supply in their local area to get into the business."

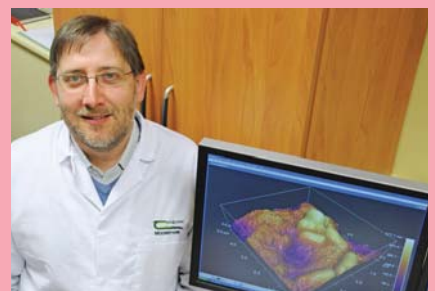
Strawberry and other soft fruit sales continue to be very strong so far this year. The cold May caused some problems for growers. However, this is only part of a long, seven-month growing season. Thanks to the new technologies fresh Irish strawberries will be available right through to October.

The science squad

Sometimes, big breakthroughs come in small packages. *The Science Squad* on RTÉ recently met Teagasc researchers who are taking big steps on the nano scale, developing revolutionary new methods for the production of lighter and cheaper plastics, manipulating food structures to reduce fat content while increasing flavour, and looking at how our genes have evolved over millions of years in an attempt to better understand genetic diseases.

Teagasc food structures researcher Dr Mark Auty spoke to presenter Kathriona Devereux about a low fat yoghurt that is just as creamy as a full fat yoghurt but without any additives.

"The microscopic structure of food significantly affects its processing characteristics, flavour properties and texture. Teagasc research could provide keys to understanding and controlling food behaviour, which could solve the 'reduced fat but with



Dr Mark Auty, Teagasc Food Research Centre, Moorepark.

better taste' challenge facing modern society," said Kathriona Devereux.

In 2007, Mark set up and now manages the National Food Imaging Centre, the world's first fully comprehensive microscopy laboratory dedicated to agri-food research. This state-of the art imaging facility located at the Teagasc Food Research Centre, Moorepark, includes light, confocal, electron and atomic force microscopes.



Teagasc farmland flora and fauna seminar

A large crowd of farmers, agricultural advisers and those involved in agri-environment heard about the wide range of native wildlife found on Irish farms at a Teagasc farmland flora and fauna seminar held in Birr, Co Offaly today.

Speakers from the National Biodiversity Data Centre, UCD, BirdWatch Ireland, Bat Conservation Ireland and the MISE project discussed grasses, flowering plants, trees, bees, butterflies, birds, bats and other small mammals.

Raising awareness of our native farmland wildlife is the objective, according to Catherine Keena, Teagasc countryside management specialist. "It is important that we understand our farmland flora and fauna so that we can look for appropriate well funded agri-environment measures that will maintain our flora and fauna."

A book entitled *The Grasses of Ireland* by John Feehan, Helen Sheridan and



LEFT: At the launch of 'The Grasses of Ireland' at Birr Castle on Monday 11 June were l to r: Dr John Feehan, co author; Marcella Corcoran Kennedy, TD; Prof Gerry Boyle, Teagasc Director; Damien Egan, co author and Catherine Keena, Teagasc environment specialist.

Damian Egan, produced by Teagasc in association with the School of Agriculture and Food Science, University College Dublin, was launched during the farmland flora and fauna event. This book is available to purchase from Teagasc, Oak Park.

Grassland is so commonplace we hardly notice it. Yet, it is our most important vegetation type — it covers most of the landmass. Horse racing, football, hurling, golf, tennis, and bowling are all played on grass surfaces.

We see grass on road and railway verges, surrounding houses and hotels and, of course, small patches of lawn front and back in most urban housing.

We use grass to improve our immediate living areas and to create a sense of contented settlement and comfortable surroundings. This book is intended for farmers, agriculturalists, horticulturalists, botanists, green-keepers, teachers, students and anyone who wishes to know more about our unique suite of Irish grasses.

upcoming events

SOLOHEAD OPEN DAY: 12 JULY

Farming on wet ground – land drainage

High rainfall and wet soil conditions on farms with heavy soils disrupt farming operations, increase costs and lower profitability. Wet summers are a feature of the Irish climate in four years out of 10 and can cause severe problems on many farms in higher rainfall parts of the country.

Effective artificial drainage of heavy wet soils can shorten the drying period, increase grass production and the length of the grazing season, facilitate harvesting of silage and application of fertilizer and slurry, and lower the incidence of liver fluke.

There will be an open day focusing on farming on wet land and land drainage at Solohead research farm, Tipperary, on Thursday, 12 July, from 11am to 3pm. Topics covered will include:

- Principles of land drainage,
 - Demonstration of drainage techniques,
 - Drainage regulations,
 - Optimum cow for wet land,
 - Animal health issues,
 - Clover management.
- This open-day is an approved event

for the Dairy Efficiency Programme (DEP) and Beef Technology Adoption Programme (BTAP). All are welcome. Queries to Margie Egan (025) 422920r email margie.egan@teagasc.ie

Dublin is the European City of Science for 2012 and Teagasc is participating in a number of events, as outlined below.

MILK: NATURE'S PERFECT FOOD

Date: 12 July

Venue: Convention Centre, Dublin

Scientific session organised by Teagasc as part of the ESOF 2012 Scientific Programme and aimed at scientists, policy-makers, media, industry students and the general public.

For more information, please contact Professor Paul Ross by emailing paul.ross@teagasc.ie

GRAND CHALLENGES FOR GLOBAL AGRICULTURE & FOOD TEAGASC/RDS LECTURE SERIES 2012-2013

Date: Thursday, 12 July at 5pm

Venue: RDS Dublin

Teagasc, in association with the Royal Dublin Society (RDS), is hosting a series of lectures on the growing challenges of sustainably meeting the food security needs of the world.

The six-part series will explore key aspects of the complex challenge of producing sufficient food, ensuring access to that food while:

- Ensuring more efficient use of scarce natural resources.
- Developing more sustainable and resilient production systems.
- Dealing with competing demands for scarce land, including energy.
- Adapting to and helping to mitigate the encroaching influence of climate change.

These 'Global Grand Challenges' must be addressed while also dealing with consumer revolutions in terms of their changing dietary requirements, increased diet related health problems and increasing consciousness of the role of food and diet in enhancing human health.

This series of lectures will begin with a lecture on:

• **Thursday, 12 July**, in the RDS, Dublin by Professor Sir John Beddington, chief scientific adviser to the UK Government.

- Registration.
- Attendance free.
- Advanced booking necessary.
- Email: lectureseries@teagasc.ie.
- Tel: 059 9170200.



2012 Organic Demonstration Farm Walks
June - September

A nationwide series of national organic farming open days will take place this summer. Teagasc, the Department of Agriculture, Food and the Marine, and organic organisations invite all interested to see organic farming in practice and to meet and speak with the producers and the sector's experts.

Fri 22 June	Paddy Tobin, Main St, Johnstown, Co Kilkenny	Cereals, Field Crops
Tues 26 June	Gerry Fitzsimons, Mullahoran, Kilcogy, Co Cavan	Beef
Mon 2 July	Mark Duffy, Bellview, Clogher, Ballbay, Co Monaghan	Beef
Wed 11 July	Thomas Kinsella, Munny, Askamore, Gorey, Co Wexford	Cereals, Sheep
Tues 17 July	Gerard & Sylvia Langan, Ballisnahyna, Ower, Headford, Co Galway	Horticulture, Beef, Sheep, Direct Sales
Fri 20 July	Kay O Sullivan, Garrynagarragh, Mourneabbey, Mallow, Co. Cork.	Beef, Sheep, Cereal
Wed 25 July	Alan Mooney, Portoriam, Killocock, Co Kildare	Cereals, Beef
Tues 31 July	John Mc Loughlin, Moneymore, Trim, Co Meath	Beef, Direct Sales
Fri 3 Aug	Pat Lalor, Ballard Farm, Kilbeggan, Co Westmeath	Cereals, Beef, Direct Sales
Thurs 23 Aug	Oliver Dixon, Ahena, Claremorris, Co Mayo	Beef, Cereals
Tues 28 Aug	Sean Condon, Fanningstown, Crecora, Co Limerick	Dairying
Mon 3 Sept	William Ryan, Moyeabbey, Ballitore, Athy, Co Kildare	Horticulture, Direct Sales
Thurs 13 Sept	Mayo Abbey Organic Centre, Claremorris, Co Mayo	Horticulture
Fri 14 Sept	JP & TJ Crowe, Gortussa, Dundrum, Co Tipperary	Pigs, Turkeys, Beef, On-Farm Processing, Direct Sales
Tues 18 Sept	John & Sara Devoy, Garrane, Roscarbery, Co Cork	Horticulture, Poultry-eggs, Eco-tourism, Direct Sales
Fri 28 Sept	Patrick O Connor, Mullinroe, Clondrohid, Macroom, Co Cork	Beef

All farm walks start at 2pm

Contacts: Daniel Clavin Athenyry Mob: 087-9368506 email: dan.clavin@teagasc.ie
 Elaine Leavy Grange Mob: 087-9853285 email: elaine.leavy@teagasc.ie





“ Dublin is the European City of Science for 2012 and Teagasc is taking part in a number of events, which will take place in the city in July

THE GREAT DEBATE ON THE BATTLE TO FEED A CHANGING PLANET

Date: Friday, 13 July

Venue: Convention Centre, Dublin

As part of the events scheduled for the Euroscience Open Forum (ESOF), a debate titled 'The Battle to Feed a Changing Planet' will take place on Friday, 13 July, at 1.15pm in the main auditorium of the Convention Centre, Dublin.

This session is organised by Teagasc and the EU Joint Programme Initiative on Agriculture, Food Security and Climate Change (FACCEJPI) as part of the ESOF 2012 Scientific Programme.

Speakers will include the following: Edward Ouko ILRI, Kenya; Leo Enright, science journalist; Prof Louise Fresco, University of Amsterdam; Prof Lynn Frewer, Newcastle University; Prof Pamela C. Ronald, University of California – Davis and Prof Rajendra K. Pachauri Nobel Peace Prize (2007).

This is a chargeable event.

Register at: <http://esof2012.org/programme/esof-2012-registration>

TEAGASC DAIRY MANUAL

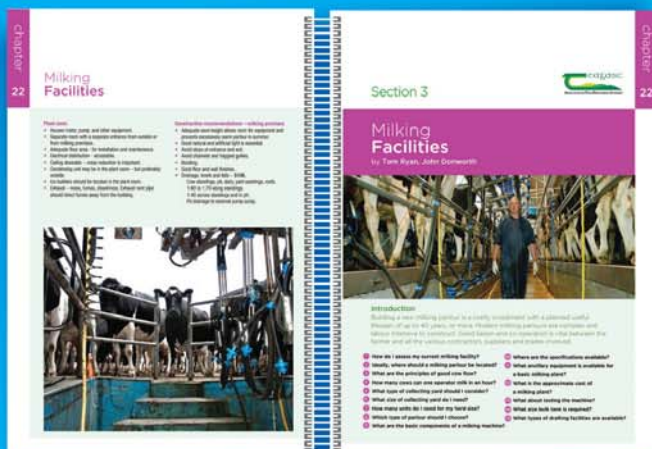
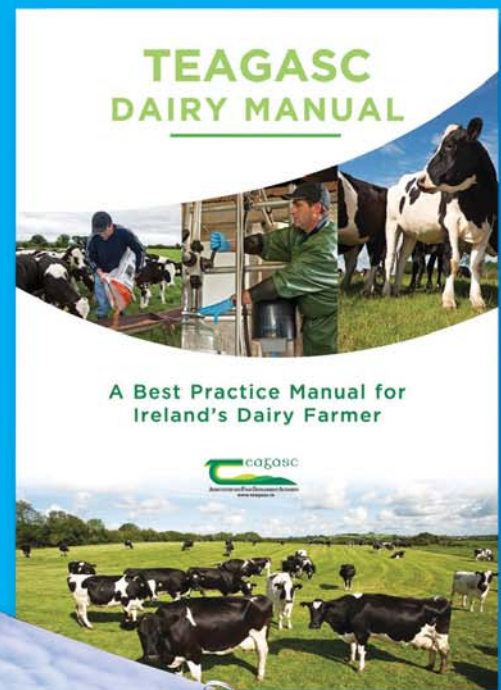
A comprehensive source
of practical advice
for any dairy business.

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

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

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

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



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

beef & sheep

Simmental sucklers at home in Sligo

High quality suckler replacements are just one of a range of livestock enterprises on this farm

Peter Mullan, Teagasc Advisory Programme, Sligo

Majestic Ben Bulbin rising vertically from lush pastures in Sligo bears a striking resemblance to Stockhorn, the highest peak in the Stockhorn range which borders the Simmen valley in Switzerland. Perhaps Simmental cattle feel at home in the northwest, though it was their ancestors who were imported to Ireland in the early 1970s.

The 'Brittas' herd in Co Wicklow, since disbanded, was one of the pioneer Simmental herds in Ireland. Richard Woodmartin who farms just outside Sligo with his wife Linda and their children Claire, Sarah and Andrew, worked with the Brittas herd where he first gained an appreciation for the Simmental breed.

Richard returned home to farm Woodville, which consists of 35ha of quite heavy land with a further 16ha of drier land at an outfarm nearby.

As well as a 30-cow suckler herd, there is a 200 ewe mid-season lambing flock and flock of over 600 hens which boosts cashflow.

"The hens take up only a couple of hours per day and we sell over 500 eggs/day within a three-mile radius," says Richard. "Free range eggs are in strong demand and our eggs find a ready market with local shops, restaurants and bakers."

More exotic and colourful fowl are also kept on the farm. Pheasant breeds including Silver, Lady Amherst, Red Golden, Yellow Golden, Reeves and Kalij. Mandarin ducks and peacocks are eye catchers for groups of adults and children who come to visit the farm. "We welcome groups from May to September, but only accept pre-booked visits. If you remain open all the time, it's a less viable enterprise," says Linda. "We are essentially a working family farm that is open seasonally."

Suckler replacements

Until the mid 2000s, replacements for the suckler herd were sourced from local marts. A Charolais or Limousin stock bull was used on the herd with the progeny sold either as weanlings or young stores. Occasionally, some heifers were brought to slaughter.

With suitable replacement heifers increasingly hard to come by, Richard and Linda decided to purchase a Simmental bull in 2006 to breed replacements from within the herd and sell any which were surplus to requirements.

"We were disappointed with some of the replacements which we were buying," says Richard. "Some were not great milkers and some were aggressive and hard to handle." The milkability and generally good



conformation of the Simmental along with the fact that, generally, calving problems would be minimal were the deciding factors.

The possibility to maintain a virtually closed herd from a disease point of view was also a benefit. Since 2006, the only cattle bought in are two Simmental bulls.

The Simmental breed is quite strong in the north west with the society holding the annual Commercial Simmental breeding heifer sale in Ballymote Mart each October. At this sale, weanling, maiden and in-calf heifers are sold, up to 300 in total. Buyers attend from both north and south of the border.

Richard has sold a number of weanling and maiden heifers at this sale over the last number of years. In 2011, nine weanling heifers averaged €780 with three maidens averaging €1,300.



Linda and Richard study calves with Peter Mullan.

For many years before purchasing a Simmental bull, weanling bulls were sold to a local repeat buyer.

This same buyer has since purchased the Simmental weanling bulls each year and has brought them to slaughter as steers, typically grading a mix of R's and U's at 24 to 30 months.

To take a look at the ICBF HerdPlus Euro-Star figures for the herd makes for interesting reading, albeit taking heed of the low reliability of the figures involved.

At this stage, the cow herd is approximately 65% Simmental with an average Suckler Beef Value of €100 (five stars within and across breeds).

Across breeds, the herd is four stars for Daughter Fertility (€38) and five stars for Daughter Milk (€98).

Female young-stock under 12 months once again are five stars overall (€109)

on SBV and Daughter Fertility (€49) and four stars for Daughter Milk (€110), and heifers over 12 months are five star for SBV (€113), milk (€103) and fertility (€49).

Bull calves routinely gain 1.4kg to 1.5kg/day up to weaning with heifers gaining 1.2kg to 1.3kg/day.

Calving interval for the herd for 2011 was 364 days, which is in the top 10% of herds nationally.

General herd management is excellent and these figures prove that herd fertility and milk yield are excellent too. Traditionally, heifers were calved at 34 to 36 months, starting in late January or early February.

However, heifers started calving from late November in 2010 (and 2011) in an effort to bring down the age at first calving and also to allow extra time for heifers to go back in calf for the second time.

This proved to be successful and, indeed, some heifers will calve down at 24 to 26 months in 2013.

The stock bull currently on the farm — Tulla Wallace — has five stars for SBV, Daughter Milk and Daughter Fertility and was sired by the well-known Kilbride Farm Newry (KFY). Tulla Wallace was purchased in autumn 2010 at the elite Simmental sale in Roscommon.

Overall, Richard and Linda are very happy having gone down the Simmental route and feel that they have done at least as well at sale time compared with having used the more commonly used continental breeds. The main message is to evaluate livestock enterprises and the mix of enterprise on the basis of what they contribute to the business rather than to simply continue with what has always been done.

FOCUS on the future

By applying state-of-the-art grassland management and breeding focus, this Longford farmer is seeing profits from his weanling production rise steadily

James Keane, Teagasc Advisory Programme, Longford

“I enjoyed dairying, in particular the breeding side, but we couldn't get hold of additional land to expand beyond about 60 cows and we were looking at a big investment in the parlour,” says Mel Farrell. Mel, of Schooland, Ballinalee, Co Longford, farms 40ha of which eight are rented. The cows had to cross a busy road twice daily and this was when the decision was finally made to quit dairying. Mel decided to start suckling and he also established a fencing business which was quite busy during the boom.

In recent years, demand for that service has cooled and Mel has more time to expand his suckler production. At the moment, he has 30 suck-



Mel Farrell.

lers, a bull and 10 in-calf heifers.

Next year, he will calve 35 cows as five cows have been identified for culling in the autumn. Fifteen cows calve in the autumn and 15 in spring and all progeny are sold as weanlings in May and October; replacements heifers are kept on the farm and calved at 30 months.

Mel runs a Limousin bull with his cows, which are mostly LimX and originally bred from British Friesian. As a result, all of his cows have milk and are well fit to rear their calves. Mel's plan is to increase cow numbers to 60 over the next three to four years. To achieve this, we have looked at different options including buying heifers ready for the bull, buying cows with calves at foot or buying in-calf heifers.

In the end, Mel decided on a gradual approach to building up cow numbers due to the current price of replacement stock. He will keep eight of his own heifers for the next three years as he has cows with good milk and he will also buy five in-calf heifers each

year for the next three years. This will result in an increase of 24 cows in three years' time as he will be culling five cows/year.

As a result of this expansion, his stocking rate is going to increase from 1.49LU/ha to 1.92LU/ha. To carry extra stock, farmers have to be better grassland managers and make better use of grass during the spring/summer. Mel already has paddocks in place and a farm roadway through part of the farm.

Mel's ICBF beef calving report shows that he is producing 0.94 calves/cow/year (the average for the country is 0.79 calves/cow/year). If he maintains this performance when he reaches 60 cows, he will have 56 weanlings live at the end of each year.

Keeping 14 replacement heifers will leave him with 42 weanlings to sell annually. Along with 10 cull cows each year, this will increase his gross output from €759/ha to €1,230/ha.

Mel has a calving interval of 382 days which he says must be improved. The ICBF calving report has a list





Mel, Linda and family.



James Keane, Daniel and Mel Farrell.

of every cow's calving interval and this identifies cows that are under-performing. Mel has earmarked five of these for culling. From the same report, we can see that Mel is calving over eight months of the year.

The plan is to tighten this back to three months over the next three to four years. He has been calving 15 in the autumn but the plan will be to spring-calve all 60 cows beginning in January and finishing at the end of March. "I'm a firm believer in getting stock out as early as possible," says Mel.

The weanling heifers will be the first out in February each year followed by cows and calves in early/mid-March. Up to now, his cows have gone out around St Patrick's Day. Cows and calves are put into a cubicle house after calving and calves are put out to the fields daily. Calves as young as two weeks old are put out to the fields as soon as possible.

This takes time at the beginning but, soon, the older calves train the younger ones to go in and out of the cu-

bicle shed. Mel says that he has very healthy calves. This, in turn, means less scour and sickness which results in lower vet bills and it also gets his cows back in heat quicker. This can be clearly seen from the ICBF calving report, where his mortality at 28 days is less than 1%.

It can also be seen in his eProfit Monitor where his vet bill is only €45/ha. Mel's stock management is excellent and this will be a challenge when he doubles his cow numbers to 60.

Plans

Mel plans to calve his spring-born heifers at 24 months. To do this, he will select heifers born in January/early February as they will have reached the target weight of 420kg at 15 months for mating.

These heifers will get 2kg of concentrate and good quality silage over the first winter to make sure they are on target. Limousin AI will be used on these heifers.

"We'll use Simmental AI on cows that first come into heat in the shed.

This will increase milk in future replacements as well as increasing hybrid vigour," says Mel. "When cows go out, the Limousin stock bull will take over."

Mel and his wife, Jacqui, believe in planning ahead for the education of their children Grace, Clara, Rachael and Daniel.

In a few years some will be going to college, an expensive time. Mel's eProfit Monitor tells us that he has a gross margin of €367/ha from a gross output of €759/ha. "Our aim is to increase gross margin to €730/ha from a gross output of €1,230/ha after we reach 60 cows and re-evaluate where we are then," he says.

Mel has a lot going for him. He has his land in one block around him (dissected by the road), he has approval for a stocking loan and, most importantly of all, he has a great attitude. His attitude and willingness to take on new challenges makes him stand out from the crowd and that is what will make him succeed in whatever he does.

**Michael Gottstein,
Teagasc Animal and Grassland
Research and Innovation Programme**

On most farms, lambs have been dosed with an anthelmintic wormer at least twice, if not three times by now. Over the last 50 years, anthelmintics have revolutionised sheep farming and allowed sheep to be intensively farmed without the need for 'safe' pasture that has been free from sheep for a year or more.

In the late 1970s/early 1980s, the first cases of drench failure resulting from resistant parasites were seen on sheep farms in the southern hemisphere. Now, resistance to anthelmintics is a worldwide problem.

Virtually all sheep will suffer from a worm burden at some stage in their lives and it is the job of the shepherd to try and contain the infection to a level where acceptable animal performance is achieved. This is where anthelmintics and management practices come in to play.

Over the last few decades, drenching strategies have advocated frequent drenching of sheep on intensive sheep farms to control parasites and maintain high growth rates in lambs. In certain situations, these strategies have increased the rate at which the resident worm populations have become resistant to the chemicals in the anthelmintics.

There are many different drenches to control stomach worms in sheep but they all belong to just five different groups. The arrival of Zolvix two years ago and Startect this year have increased the spectrum. But we had a 20-year wait to get these products. The last group to be developed prior to these were ivermectins in the 1980s. We must be careful to manage these new chemicals well.

For convenience, the various wormers are categorised into five groups coded by colour:

- **Group one (white):** Benzimidazoles are the white (sometimes blue) drenches such as albex, panicur, systemex, valbizan, curizole, etc.
- **Group two (yellow):** Levamisoles



In the late 1970s/early 1980s, the first cases of drench failure resulting from resistant parasites were seen on sheep farms in the southern hemisphere. Now, resistance to anthelmintics is a worldwide problem



Widespread resistance

The level of parasite resistance to anthelmintics in Irish sheep flocks is alarming. Many farmers do not realise that they have a problem. It is essential to establish the situation on your own farm

are the yellow drenches such as chavanaugh, levacide, nilverm, etc.

- **Group three (clear):** Macrocytic Lactones/Avermectins are clear drenches such as ivomec, oramec, animec, genesis, etc.
- **Group four (orange):** Monepantel is a new product and is available as a prescription-only medicine under the trade name Zolvix.
- **Group five (purple):** Derquantel is a new molecule that has been combined with abamectin (group three) and has been launched this year as a prescription only medicine under the trade name of Startect.

There are two questions that every sheep farmer should be asking at this point:

- 1) How effective are the sheep drenches that I am using?
- 2) How do I prevent or slow down the development of resistance to anthelmintics on my farm?

How effective are the sheep drenches that I am using?

A good starting point is to identify how effective the various anthelmintics are on the worm populations found on your farm.

The only effective way to get an answer to this question is to get some dung samples taken and send them to the lab.

- The procedure is:
- Identify when the sheep have a worm burden — ideally, take a dung sample.
 - Weigh the heaviest sheep in the group and set the dosing equipment to deliver the appropriate dose.
 - Check that the dosing equipment is delivering the required amount by squirting 10 doses into a beaker and measure the quantity.
 - Drench the sheep carefully, making sure that they fully swallow the drench.
 - Seven days later (in the case of



Only use anthelmintics when necessary — use faecal egg counts to guide you as to when treatment is required.



Drench sheep carefully, making sure that they fully swallow the drench.

Levamisole — group two) or 14 days later (for all other groups), collect dung samples and submit them to the laboratory.

• If worm eggs are present, there may be a problem with anthelmintic resistance and the product should no longer be used.

The faecal egg reduction test can be done in any of the regional veterinary laboratories. Certain private veterinary laboratories also carry out the test.

How do I slow down the development of resistant parasites to anthelmintics on my farm?

There is no way that any farmer can stop the development of anthelmintic resistant parasites on his/her farm but you can certainly take steps to delay the development of resistance.

1) Ensure effective (proper) administration of anthelmintics. (i.e. weigh

sheep and dose according to the heaviest, calibrate dosing gun and ensure that the dose is given correctly over the back of the tongue.)

2) Only use anthelmintics when necessary — use faecal egg counts to guide you as to when treatment is required.

3) Use the most appropriate anthelmintic – avoid combined fluke worm drenches unless you have a problem with both parasites.

4) Reduce the dependence on anthelmintics through mixed grazing, etc.

5) All bought-in sheep should be treated with both a group four Zolvix and group three Macrocytic Lactone sequentially on arrival and kept in quarantine for 48 hours.

6) Routine worm drenching of adult ewes for pasture hygiene reasons should not be practiced where lambs will be routinely dosed without the use of faecal egg counts. Hogget ewes

or individual thin ewes are an exception.

7) Farmers should be aware that the 'dose and move' onto clean pasture strategy is likely to be highly selective for worm resistance. Strategies such as a) treating lambs several days prior to movement, b) delaying treatment for several days after the move to clean pasture, or c) leaving a sub group (10%) untreated might be considered (e.g. heaviest/healthiest lambs). Options a) and b) above would be most appropriate for residual activity products (e.g. cydectin).

8) Check for anthelmintic resistance regularly (every two years) using the faecal egg count reduction test.

9) Once resistance to a particular group has been established, stop using that group (except in the case of nematodirus — resistance does not apply to nematodirus).

goats

NO KIDDING

First develop your market

This goat farm has much to teach dairy farmers



Cian Condon,
Teagasc Advisory Programme, Navan

When it comes to dairying, there are lots of advantages of goats over cows. Goats require less investment, are more efficient and since they virtually always produce twins — a male and a female — replacements are never a problem. They also only give birth during daylight and once a goat has given birth, she can continue milking for several years without the need to become pregnant again.

But when Michael Finegan returned home to Meath from a spell in New Zealand he wasn't looking for an easy option. Having managed a 2,000-cow unit there, he was no stranger to hard work and loved dairy farming. He planned to run the family dairy unit between Slane and Navan but expansion was impossible without buying quota and the need for a new parlour would also require significant capital.

"We had seen goat units in New Zealand and we decided to try a herd here," said Michael, who bought in a herd of goats and imported a second-hand goat milking parlour from the UK. "As it turned out we probably started near the top of the market in the mid-2000s."

Free market

Goats' milk is a free market and may be a good indicator of how unstable dairy milk prices will become after 2015. "Even when demand was booming the price we were getting was volatile," said Michael. "The price could vary between 50c and 70c/litre through the year. We are still very happy to supply Glenisk but we saw the need for an outlet that would offer us a more stable milk price." Cheese was the answer.

Michael and his wife Jenny thought there might be a market for an unpa-



The goats are primarily Saanen with other breeds also present.

BELOW: Michael and Jenny Finegan, with their daughter, Julia.





Health benefits

Goats' milk has long been associated with certain health benefits, particularly in the case of asthma and eczema. However, due to its chemical and physical properties, it is also much more readily digestible by the human body.

Goats' cheese, rarely found on menus 20 years ago, has become a firm favourite with the Irish palate and is now commonplace in restaurants. Goats' meat contains less calories, fat and cholesterol than all other common meats, including lean chicken, and work has been successfully carried out incorporating it into prepared meat products in order to reduce the fat content.

Meat option

Until recently it was common on Irish and British farms to put down newborn male kids as there was no market for them. However, recent media attention publicised the plight of male dairy kids and the potential of goats' meat.

The ethnic make-up of our population has changed drastically over the last 20 years, and for a large proportion of these people, goat is traditionally their primary source of animal protein. Goat is the most widely eaten meat in the world and is eaten daily in Hispanic, African, Asian, Middle Eastern and Caribbean nations. Goats' meat is also a key part of the menu for religious and ethnic holidays in many countries.

From the time the first kids were born on their farm, Michael and Jenny Finegan decided to keep a few of the males to try out the meat. "We loved it," said Michael. "It also went down very well with friends and neighbours and it became increasingly apparent that this was a great product with a definite market."

Dairy goats aren't particularly well suited to fattening for meat and a Boer male was purchased to help produce a better carcass.

Even with the small amount of promotion that goats' meat has received, Michael has had a lot of interest in recent months.

In the coming season, there are plenty of buyers for the young males and none will be put down at birth.

With ethnic demand emerging and increased demand for healthy meat products, goats' meat will be finding its way onto Irish tables more often in future.

teurised blue cheese made from goats' milk. They approached cheesemaker Peter Thomas who produces Bellingham Blue, a 'raw' cows' milk cheese. Peter Thomas had spare capacity in his cheese plant and agreed to produce Boyne Valley Blue under contract. Crucially, Michael owns the brand. "It's vital to build up your outlets before expanding production," said Michael. "We plan to add to our goat numbers but, at the moment, we are putting a huge amount of time and effort into building the brand."

Boyne Valley Blue will soon be available in Irish Tesco stores and is exported in co-operation with Sheridans the cheesemongers. A major up-market London retailer, Neal's Yard, also is planning to stock the cheese. "The amount of time and paperwork needed to work with retailers is huge," said Michael. "That came as a shock. Fortunately, Peter was familiar with much of that, which assisted us greatly."

Sharing

Michael stresses the importance of having his wife Jenny to share the burden of work on the farm, despite working full-time as a nurse and re-

cently having their first child, Julia.

Yields have risen consistently since they began milking in 2008 and put their own stamp on the purchased herd and continue to breed top quality replacements.

The goats are primarily Saanen with a mixture of other breeds also present. Michael keeps a male from each of the four main dairy breeds as he's a big believer in hybrid vigour and the use of Anglo-Nubian, in particular, helps to increase milk solids.

In the long term the aim is to more products and to construct a cold room on the farm. However, this will require major investment, and in the current climate, credit has become exceptionally difficult to obtain. In any case, the actual production of any new products will continue be outsourced.

In addition, all of the cheese is currently sold to wholesalers, which produces a lower margin but allows Michael to commit his time to working on the farm. Despite the success of the cheese, Michael emphasises that he developed the cheese to generate a steady and growing demand for his goats' milk and a less volatile price.

dairying

Weight a key issue

'If you don't measure it, you can't manage it' is a management cliché which contains more than a germ of truth, especially for dairy replacements, write Denis Brassil, Teagasc Advisory Programme & Tom O'Dwyer, Teagasc Animal and Grassland Research and Innovation Programme

On many farms the milking cow is monitored and measured like a Formula 1 motor car. Her milk production is gauged through the bulk tank and grass consumption is tracked by measuring weekly covers. In some cases her every footstep is recorded to detect heat. By contrast, the performance of the cow's daughter, while equally important, is often neglected.

Unless replacement heifers are weighed a number of times during the year it is impossible to accurately chart their progress. If these animals are not managed as well as the dairy herd, the result can be failure to reach target weights, failure to calve at 24 months and reduced lifetime milk production.

Teagasc recognised this earlier this year and launched a project for discussion groups with the support of ACCBank, ICBF and the *Irish Farmers Journal* as partners. The aim of the initiative is 'to promote improved dairy breeding, fertility and heifer rearing management among dairy discussion groups'.



Denis Brassil, Teagasc Moorepark, addressing members of the Positive Horizon Discussion Group on weighing stock at Larry Kearney's farm, Barnahash, Fermoy, Co Cork.

BELOW: Larry Kearney and Denis Brassil checking heifer calf weights.



In relation to heifer rearing, groups were encouraged to focus on the management of heifer calves (born 2012). Each group is encouraged to weigh as many of these animals as possible (ideally, all heifer calves) at six months of age – which means early September on many farms. A

feedback report will be produced by ICBF in September to summarise the weight data submitted and to allow for informed group discussion.

The Positive Horizon Discussion Group (PHD) from Co Cork is one of many who have taken up the challenge. The group has 20 members, drawn from the parishes of Rathcor-mac, Watergrasshill and Carrignavar.

As a group they have previously taken on projects relating to mastitis, herd fertility and cost control.

The group's next meeting is to take place in early July and all members have agreed to weigh their heifers in advance. Four of the members already have their own weighing platforms/scales and the remaining

Table 1: Replacement heifer target liveweight for 1 August for four different breeds and three different birth dates, assuming a 1 February target calving date

Target liveweight 1 August						
Born on	Age on 1 August	HF	NZ/BrF	NR x HF	J x HF	J
1 February	6 months	174	165	174	164	147
1 March	5 months	155	147	155	145	131
1 April	4 months	135	128	135	127	114



New contract weighing service from FRS

A new development in this area is the availability of contract weighing.

For example, Tipperary FRS offers such a service to farmers in Co Tipperary. ICBF are also very close to launching a weight recording service, with technicians located around the country.

While the main driver to get the service off the ground has been the requirement for beef cattle weights, the service will also be available to dairy farmers. Each technician will have a platform, a

pair of weigh cells and a handheld device which automatically records the animal's weight.

The cost of this service is likely to be a €60 call-out fee, which includes the first 15 animals; animals 16 to 30 at €2.50 per animal and animals 31 plus at €1.25 per animal. So, for a farmer with 60 animals (30 calves and 30 older heifers), the cost would be €142.50 or €2.38 per animal. Given that these animals are the future of your dairy herd, it seems like a wise investment.

members recently took the decision to jointly invest in a new weighing platform.

"We've agreed as a group to share the data and use it to benchmark where we are currently in relation to heifer performance," said group member Larry Kearney of Barnahash. The group wants to identify heifers below target weight and agree an appropriate management strategy for these animals. As a group member put it: 'we can set a target of achieving a target weight at housing'.

All members of the PHD group are assigned to one of three sub-groups, based on their farm stocking rate. The sub-groups meet between general group meetings on each other's farms. Previously, the focus of these sub-group meetings had been on grassland management but heifer performance will now be added to the agenda.

Larry Kearney's sub-group all met on his farm recently to help Larry to weigh his heifers and to discuss the weights recorded. *Table 1* shows the target liveweight for 1 August for four different breeds and three different birth dates, assuming a 1 February target calving date.

The figures are taken from the Calf Weight Ready Reckoner which is available on the Teagasc website, www.agresearch.teagasc.ie

Target weight tables are available for four different breed types (HF, NZ/BrF, J x HF and J) and three different age-at-calving options. See *Table 1*.



The PHD group wants to identify heifers below target weight and agree an appropriate management strategy for these animals at their next meeting

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Thomas Gleeson,
Teagasc Advisory
Programme,
Kilrush, Co Clare

Soccer is called the 'beautiful' game but hurling, in my opinion, is far superior. The skills displayed, the speed, the precision, all make good hurling a joy to watch. Part of the enjoyment comes from the scoreboard. How often do you see 'nil-all' in hurling? Thirty points/goals over the 70 minutes is not unusual and, at any moment, each team knows exactly where it stands. Catching up? Pulling away? Falling behind? The scoreboard tells it all.

Too many farmers are working without an effective scoreboard. A set of accounts is of limited use, unless you know how you compare with similar farms you cannot tell how well you are doing, whether you are meeting your potential.

This article is about eProfit Monitors, a series of reports designed to measure a farm's performance. Over time, the eProfit Monitor allows useful comparisons between different years on the farm, charting progress.

I work in west Clare, predominantly dairy and beef country with heavy fertile soil and a climate strongly influenced by the Atlantic Ocean. As part of my Teagasc role I facilitate five dairy discussion groups. The common denominator is that appearances only tell you part of the story.

It's not until you see the financial figures that we know if a farm is truly performing. For years, a growing number of farmers have been completing eProfit Monitors.

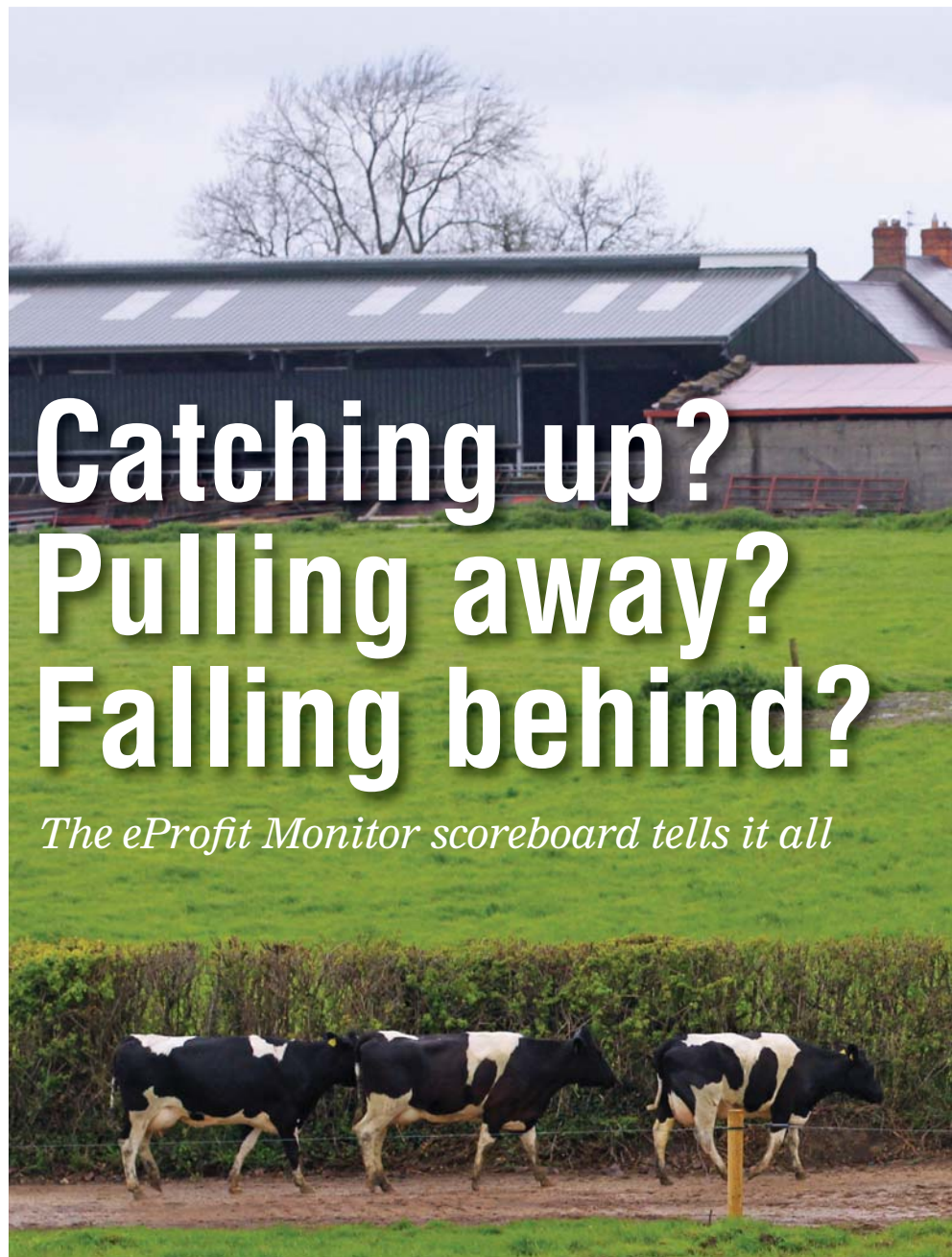
They started with questions like: Are my cattle making money? How do I compare to other dairy farmers? Am I doing things right?

Of course, eProfit Monitors are not only available for stock or dairy enterprises, tillage or mixed farmers can also benefit.

Once the eProfit Monitor is completed, the questions change to: How can I improve these figures? Am I making progress? eProfit Monitor data allows the farmer to set goals and create a plan for the year. By completing an eProfit Monitor the following year, he can measure if the plan worked.

From individual interest came a group interest. 'How do we know if the group is making progress?' This year, all groups completed an eProfit Monitor and received group reports. This report is used during all farm visits; now, we have a full farm picture.

All farmers in the Dairy Efficiency Programme (DEP) are obliged to complete an eProfit Monitor in year



two or three of the programme. 2012 is year three for all and it is estimated on 1 June, more than 2,000 eProfit Monitors have yet to be submitted.

Remember that your household figures are not disclosed to anybody. The only information shared with groups is output and efficiency in cent/litre (c/l) and even then you can choose to keep that information private. For example, am I producing milk at 16, 20 or 24c/l? Is my meal costing 2, 4 or 8c/l?

How to get started

In business, even more than in sport, you need a marker and an aim.

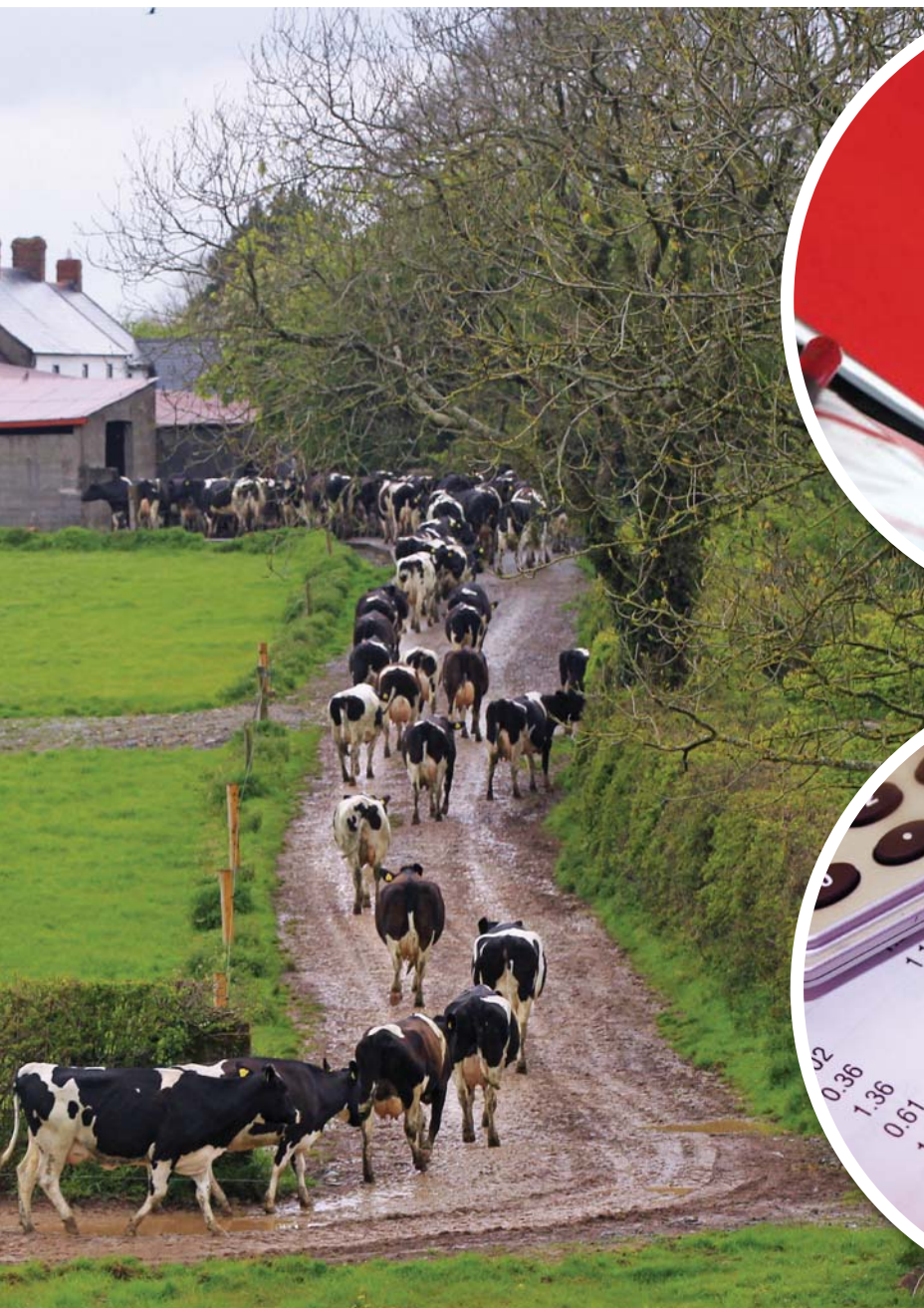
Two things an eProfit Monitor will give you: your output (all money in) and your costs (all money spent).

An eProfit Monitor compares the total output produced (milk, beef etc) versus the costs to produce that out-

put. It sounds simple but without an eProfit Monitor, how do you compare yourself directly to other farmers within your parish or county?

I can't think of anybody who looks forward to gathering information and dissecting the paperwork but you can make it easier by using the resources you have on hand, your accountant, Teagasc adviser, ICBF website for stock numbers etc.

1. Use your accounts: Lots of information has already been gathered and processed. The eProfit Monitor will take these figures and give you efficiency figures. The disadvantage is that the figures were assembled for the purpose of tax and not an eProfit Monitor. Dissecting these figures into the eProfit Monitor categories may reduce the accuracy of the information somewhat but the final costs will still be the same.



Most farmers submit their accounts eight months into the following year. Your results, while relevant, will come at a period when most of the year's spending and production has passed. This option could be useful for those in DEP as a starting point. Some accountants will tailor their printouts to match your eProfit Monitor input sheet.

2. Gather information yourself: Use summary documents as opposed to chasing individual receipts. Most co-ops will print a summary document of all milk produced and give a breakdown of your yearly spend. All Department (DAFM) payments will be found on one summary page or online. Your Teagasc adviser will be able to acquire your stock numbers. Mart purchases and sales are also on hand.

With regards to your spending, in my experience all farmers are still in

favour of using cheque books. Label all stubs in your cheque book and write all farm cash payments made that year separately. Print out of your bank accounts to double check for direct debit payments (e.g. ESB and phone).

Your bank accounts will also show opening and closing balance and all farm loan interest paid. Your bank will happily send you a summary statement of a year upon request.

Once the information has been gathered, contact your Teagasc adviser. It is easy to mend any small holes that appear thereafter. The whole process should take no more than a few hours.

3. Use a Teagasc Cost Control Planner (CCP): Monthly figures of all cash in and out are recorded. The system is designed to be filled as you go along during the year. It is definitely the most accurate method and

farmers who have taken to using it have not gone back. It offers the added benefit of assessing your cashflow monthly and allows projected cash-flow budgets. It is a very important tool in a low milk price year or where big spending is planned.

Once the CCP is filled in, your adviser can take the information and transfer it directly to the eProfit Monitor. The CCP is available from your local Teagasc adviser.

The analysis of your eProfit Monitor could be the basis of significant decisions that you will make, so be careful with the data entered.

If you enter inaccurate figures, the conclusions will be worthless. Above all, make a start, your adviser can help. A few hours will achieve a lot. Soon, you will have your own scoreboard and every likelihood of even better results in the future.

Everyone wins

Contract rearing heifers is a new niche which can benefit both sides

Colm Kelly, Knowledge Transfer Walsh Fellow, Teagasc Killarney

Few farmers would even consider taking silage making 'in-house' after decades of leaving that job to specialists. Increasingly, farmers are seeing contract heifer rearing in a similar light. Contract rearing is an arrangement between the rearer, who contracts to raise replacement dairy heifers, and the owner.

Usually, the contract covers a set time period or an agreed specification. The owner pays a fee per animal. Outsourcing heifer rearing has numerous benefits for the dairy farmer and offers a new opportunity to non dairy farmers.

Benefits

Farmers are already out-sourcing slurry spreading and hedgerow maintenance, as well as silage-making. The farmer's management time, labour, physical and financial resources are limited and it is simply more efficient to allow a contractor to do the job. It is no different for contract heifer rearing.

Where labour is tight, due to farm expansion perhaps, contract rearing can free-up time to focus on the milking herd. If heifers are underperforming on the home farm and missing key weight targets it may be much more cost-effective to have heifers contract reared.

On some farms, there is the potential to free-up land and housing previously occupied by replacement heifers to increase cow numbers. Finding suitably priced land within a reasonable distance of the home farm on which to rear heifers is often a challenge. A contract rearing agreement may well be preferable to rearing heifers yourself on a distant block of land.

Contract rearing can make sense for the rearer too. Payments are usually made monthly, boosting cashflow. Contract rearing allows the rearer to

Key messages

- Contract rearing of replacement heifers is a growing trend which can benefit owner and rearer.
- Teagasc has recently launched two new 'specimen agreements' which can be used as the basis for a rearing agreement.

use existing land, facilities and expertise, without the need to purchase and market stock with the associated investment and risk.

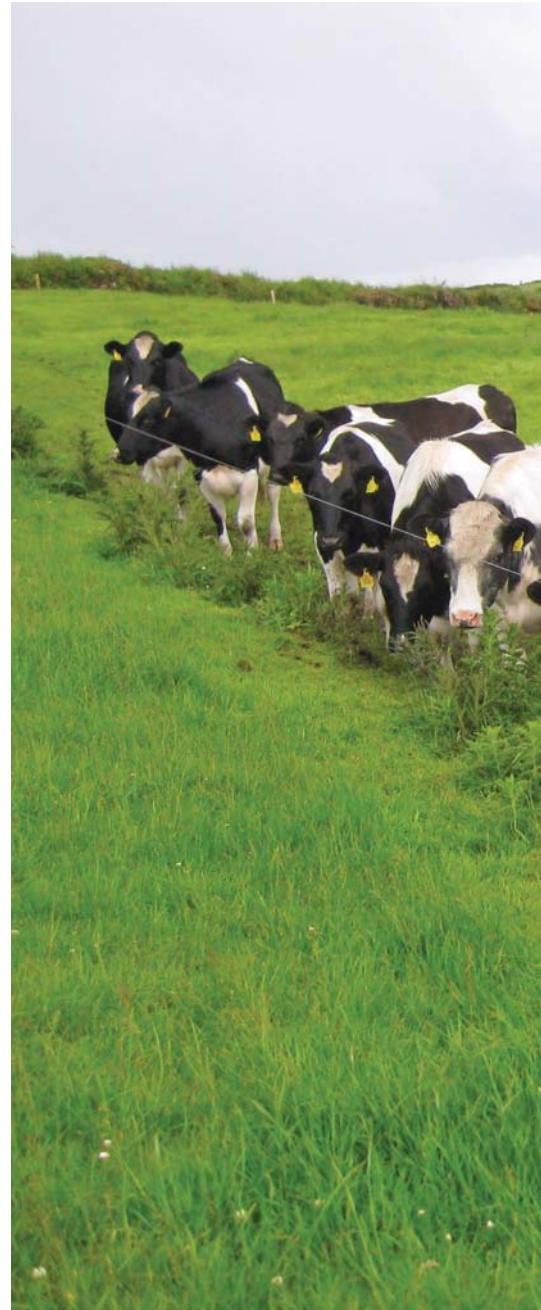
First hand experience

Former dairy farmer Noel Lane is in his third year of contract rearing heifers. He exited dairy farming in 2007 and, after selling the last of his replacement heifers in 2008, he responded to an advert from a farmer seeking to place his heifers into a contract rearing arrangement.

Stock come to Noel's farm in March as yearlings and are kept through the breeding season to the following November when they return to the owner's farm. Noel herds the heifers daily and manages the grassland. Stock bulls are used to breed the heifers. Should heifers have health problems, the owner is notified and decides on the course of action. A condition in the agreement specifies that, where a heifer dies, all payments made for it are refunded.

According to Noel, this condition gives the heifer owner peace of mind because it ensures that he, as the rearer, is carefully herding everyday and looking out for the heifer's welfare. All routine dosing is carried out by the owner and visits can be made at any time subject to appointment.

Contract rearing arrangements can cover any period of time from birth to calving. The most common arrange-



ment is from the time the heifer is weaned, around 1 May, to 1 December the following year.

This takes in all stages of heifer growth from weaning onwards, while allowing for a period of six to eight weeks prior to calving on the home farm. This period allows the heifer to develop local immunity to the disease pressures on the home farm and to generally acclimatise before she starts contributing to the bulk tank.

Biosecurity

Noel deals exclusively with one dairy farmer who places 50 heifers per year on his farm. "I feel that having one source of heifers is preferable from the bio-security point of view," says Noel. "If we were to have a TB reactor (though it has never yet happened) I believe we would be in a better position to deal it."



But could it pay for farmers to take heifers exclusively from a single dairy farm?

Noel reckons that beef farms purchasing 15 to 20 cattle could rear heifers from a single dairy farm and have greater certainty, profitability and improved cashflow.

Some rearers take stock from a number of dairy herds but are able to keep the heifers in separate groups.

Other rearers will mix heifers where it is not possible to keep them separate. It is important to remember that even where heifers are home reared, nose-to-nose contact with neighbouring cattle can spread disease.

Always check for regional TB blackspots before choosing a rearer or source of heifers and organise herd tests 120 days prior to when heifers are due to return to the home farm in order to allow time for retests.

Custom contracts

Noel and the heifer owner researched contract rearing templates from both New Zealand and Ireland and by drawing on both came to an agreement, which satisfied both parties.

Teagasc has recently published two templates or specimen agreements which are designed to assist farmers structure a rearing agreement.

The first is a 'flat rate contract', where the rearer is paid on a daily basis for a specified period of time. Under the second template, the 'weight bonus contract', a proportion of the payment is withheld subject to the heifers reaching weight targets at critical times, e.g. housing for first winter and pre-mating.

Both templates are comprehensive documents and lay out responsibilities for various costs and management practices, as well as outlining

expectations from both parties.

The relationship between the contract rearer and the heifer owner is a partnership and both sides need to have input into the rearing agreement. Both documents are now available on the Teagasc website www.teagasc.ie/collaborativefarmingarrangements.

A written agreement is essential but good communication between owner and rearer is the real key to success. In cases where results are poor, the fault often lies as much with the heifer owner as the rearer. 'Was it the rearer's failure to manage the heifers, or the owner's failure to manage the rearer?'

"Trust is vital," says Noel. "Having two people who are willing to make it work makes all the difference to the success of the arrangement."

2011 proves to be a good farming year

The Teagasc National Farm Survey released its 2011 farm income estimates last month. The results of the survey show that 2011 was a very good year for farming with the average farm income reaching an unprecedented high of almost €25,000, a 32% increase on the 2010 figure

Livestock farms, in general, did well in 2011 with the income on the average dairy farm up 38% to just under €70,000 and with income on cattle and sheep farms up 50% and 27% respectively, albeit from a low base.

While grain markets remained favourable in 2011 and output increased considerably, losses on potatoes coupled with cost inflation, especially in fertilizer and energy, eroded most of these gains leaving tillage farm incomes relatively unchanged from the 2010 level.

There's a saying that you learn more from adversity than good times and 2009 and 2011 represent both in terms of farm incomes. With increased farm income volatility almost certain in future years **Thia Hennessy, head of the Teagasc National Farm Survey**, addresses some lessons from the huge swings in income over the last three years.

Q1 Are the kind of income swings we have seen over the last three years likely to be the norm in future?

In the 40-year history of the Teagasc National Farm Survey, we have not seen income volatility comparable to that experienced over the last four years. Average family farm income fell by 30% from 2008 to 2009, increased by over 50% from 2009 to 2010 and a further 30% from 2010 to 2011. Unfortunately, the signals so far in 2012 are for a downward move again. Incomes in the dairy and tillage sector have displayed even more volatility than the sector average.

It is likely that this type of income volatility will be a permanent feature of farming in the future. While risk or market volatility is an inherent

LESSONS from a good year



Family farm income increased by 32% in 2011 according to a preliminary estimate of the Teagasc National Farm survey results. At the launch of results were, from the Teagasc National Farm Survey team, Anne Kinsella, Dr Cathal O'Donoghue, Head of the Teagasc Rural Economy & Development Programme, Brian Moran and Dr Thia Hennessy.



part of agricultural markets and production, up to recently farmers in Ireland were largely insulated from this market risk by European policies. Policy reforms, such as reduced intervention prices, lower tariff rates and reductions in export subsidy expenditure, have increased the exposure Irish farmers to world market volatility in both input and output prices. These policy reforms are unlikely to be reversed so Irish farmers need to prepare for more income swings in the future.

Q2 What are the most effective strategies to manage income volatility?

There are a number of ways that farmers can deal with income volatility. First, multi-year planning will need to become an important component of farm management. Farmers will need to use the additional funds available in good years to survive the bad years. This was always an aspect of farm planning but will be a more important one in the future.

Forward contracts are increasingly available, especially in the grain and milk markets. These contracts allow farmers to lock in the sale price of their products at the start of the year. In a year where the market price falls, farmers in a forward contract gain by receiving the contracted price. However, on the flip-side, they do not benefit from any unforeseen improvement in the market price, so it is a gamble.

Q3 Should farmers increase their number of enterprises to reduce income volatility?

In the investment world, portfolio diversification is a strategy used to reduce an investor's exposure to the risk of one particular sector failing or doing badly.

While the same principle applies to farming, i.e. the more enterprises you're involved in the less exposed you are to any one sector, farming is more complex. It is important for farmers to specialise in the enterprise for which they have a comparative advantage, that is the enterprise for which they are experienced, have the production and husbandry knowledge and for which they have the appropriate facilities and machinery.

It is common practice for tillage farmers to plant a number of crops in a given year to protect themselves from big price swings in very risky crops such as potatoes.

This diversification practice is less common with livestock farms. Certain farm enterprises such as dairy and some crops continue to out perform other enterprises such as cattle and sheep on a profit per hectare measure, and while dairy and

crop prices might fluctuate, the relative profitability of production means that these enterprises are still most likely to provide the highest return per hectare.

Q4 What should farmers do in really good years?

The results from the 2011 Teagasc National Farm Survey show that total sector level debt declined by 20% on the 2010 figure to an aggregate sector level of just over €1.8bn. This suggests that farmers used the favourable market conditions experienced in 2011 to repay debt and this seems a sensible use of funds in a given year. Investment levels also remained high in 2011 with just over €650m invested in the sector. Again, it seems like good management for farmers to take the opportunity to upgrade machinery and facilities when circumstances allow.

Q5 What should farmers do in the really bad years?

This is a tough question. Farmers need to engage in multi-year planning to allow them to take the bad years with the good. The Teagasc financial management advisory team have a number of programmes and packages available to assist farmers in this regard and Teagasc clients can avail of this service.

Q6 Should farmers invest in other industries (shares/property) in good years to generate new income streams outside agriculture?

As the advertisement says, "the value of your investment may rise or fall" and anyone who bought bank shares or property in the early part of this decade are painfully aware of this fact. Any type of investment is a risky one and farmers should proceed with caution!

“ Average family farm income fell by 30% from 2008 to 2009, increased by over 50% from 2009 to 2010 and a further 30% from 2010 to 2011

Farm injuries increase by one-third

Today's Farm editor Mark Moore took the opportunity to interview Teagasc health and safety officer John McNamara on the findings of the recent National Farm Survey on Farm Injuries

Teagasc has conducted a national survey of farm injuries, what are the findings?

The main finding is that injuries on farms have increased by 35% (over one-third) since the last survey in 2006. Almost 2,500 were reported for 2010 compared with 1,800 for 2006. This is of major concern as injuries cause tragedy, pain and suffering as well as farm business loss. Given that agriculture is on an expansionary path, the survey indicates that we need to re-focus on farm injuries.

How is the survey of farm injuries conducted?

The survey is conducted among about 1,000 farmers who participate in the Teagasc National Farm Survey. The data can then be weighted to represent farms nationally above 2ha (circa 100,000) by farm size and system. We greatly appreciate the co-operation and support of participating farmers, as the survey gives us really valu-

able data to drive health and safety programmes.

Who is suffering injury on farms?

It's mainly the farmer or farm operator who accounts for 73.3% of injuries. Other categories of persons injured are farm workers (8.9%); spouses (who could be male or female), 8.6% and family members (7.5%) and others (1.7%). A key message from this finding is that farm family members suffer over 90% of injuries on farms.

Where do farm injuries take place?

The farmyard is where almost three-quarters (71.5%) of injuries take place. Other locations are farm buildings (18.7%) and in fields (9.8%). It's around the farmyard that a lot of work activity takes place, like tackling-up machinery, dealing with livestock in confined locations along with having trips and falls or being struck by falling objects.

What types of injuries are occurring?

Injuries from trips to falls and blows are most frequent, accounting for 42% of injuries (Figure 2). Other major causes are livestock-related injuries (33%), vehicle and machinery (11%), chainsaws (3%) and other (8%). The trend over the various surveys indicates that machinery injuries have



declined significantly, which is great news, but the proportion associated with livestock has increased.

How severe are farm injuries?

Ninety-five percent of reported injuries required medical treatment. Of these, 49% required hospital inpatient treatment and 36% required hospital A&E treatment. Seventy-one per cent lost 10 or more work days with

“ As agriculture is on an expansionary path, the survey indicates we need to re-focus on farm injuries

Figure 1. Trends in farm injuries – national farm surveys 1991- 1996.

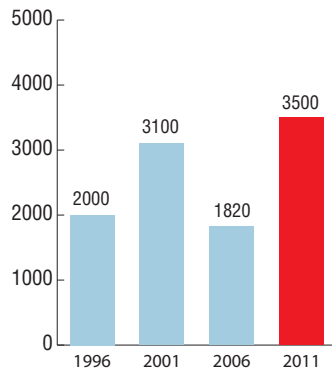
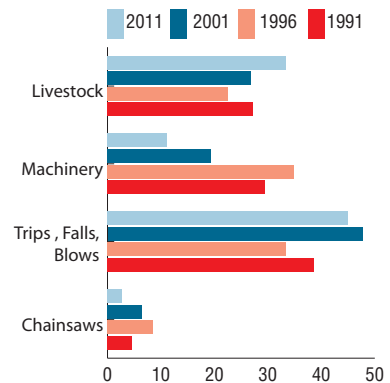


Figure 2. Trends in injury causation.





Machinery and farmyard equipment, such as PTO shafts, are frequent causes of injury.

systems (dairying 11%; dairying and other 12.9% and sheep (10.9%) have the highest injury rate over the survey period.

The two cattle systems (cattle — breeding 6.1%; cattle – non breeding 6.1%) and tillage (6.7%) have approximately half the injury rate.

Regarding farm size, categories under 30ha had injury rates of about 6% while those over 30ha had rates in the 10% to 12% range.

The NFS classify farms as 'Full' or 'Part-Time' based on whether more or less than 0.75 standard labour units are required to operate the farm. This is one measure of the work-time required to run the farm.

The data does not relate to whether a farmer actually works full or part-time on the farm, however. The injury survey data shows that the larger scale farms designated as full-time (12.6%) have over double the injury rate of those designated as part-time (5.6%).

Overall, what is the injury survey data telling us?

The survey indicates that the larger scale farms in the intensive farming sectors of dairying and sheep have double the injury rate of smaller less intensive farms. However, an injury is an injury, so all farmers should focus on safety, but larger, more commercial farms have twice the risk.

How does the survey data for injuries compare with fatal injury data?

Fatal farm injury data available for the HSA indicates that 49% (almost half) of deaths related to vehicles or machinery, 19% of falls or collapse of objects and 14% due to livestock. It is clear that machinery is particularly associated with a high proportion of deaths. The non-fatal data from the NFS indicates, however, that a high level of injury due to trips falls and blows along with livestock injuries occur too. Particular emphasis needs

to be given to causes of fatal and serious injury.

What are the key messages on injury prevention from the survey?

Farming at a practical level is very dynamic; there are people, vehicles, livestock and materials constantly moving around on farms. Injury occurs when a person contacts an energy source like a fall or a blow or a machine entanglement. Timing often determines if an injury or a 'near-hit' occurs. It's a question of always watching out for danger points and avoiding them.

The key issues that the national survey identified are:

- Contact with vehicles and machine parts.
- Tripping in the farmyard or falling from heights.
- Contact with livestock.

Work organisation to avoid rushing is crucial to prevent injury as the farming sector moves into an expansionary phase. Effective work organisation allows time to actively manage health and safety.

Code of practice completion

The survey indicates that 55% of farmers have completed the Farm Safety Code of Practice risk assessment and 22% have attended a short training course on the code.

Completing the Farm Safety Code of Practice risk assessment is a legal requirement and it gives a practical template to managing health and safety problems on farms

Teagasc will be holding further half-day training courses on completing and implementing the code in the autumn.

The following two recent DVDs on farm safety are available at Teagasc You Tube at: <http://www.youtube.com/user/TeagascMedia>

- *Guidance on the Safety Handling of Cattle on Farms.*
- *The Survivor Stories: Real Farmers Real Accidents.*

41% causing more than 20 days to be lost and 15% causing more than 100 days. It is clear from the data that the majority of injuries reported are serious.

What farm systems and farm size have the highest injury rate?
The National Farm Survey (NFS) categorises farms into six systems as per *Figure 3*. The two dairying

Figure 3. Injury rate by farming system.

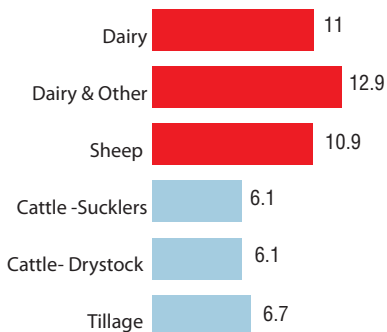


Figure 4. Injury rate by Standard Labour Units (< 0.75 SLU)

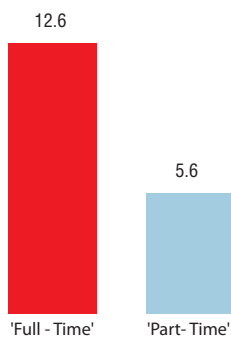
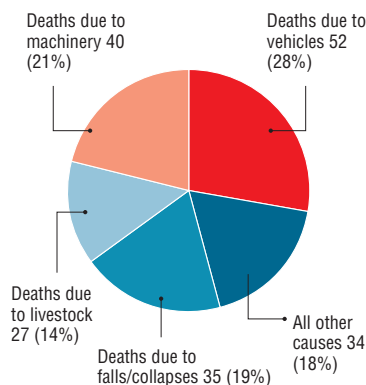


Figure 5. Fatal Farm Injury data on Farms (2000-2010).



CARBON FRIENDLY FARMING:

Improving production efficiency will reduce the level of greenhouse gases produced and may offer Irish farmers a competitive advantage



Mark Gibson,
Environment
Specialist, Teagasc
Crops, Environment
& Land Use
Programme

If you have decided to read this article, you have already taken the first step to reducing the carbon footprint of your farm! So, why should you consider reducing your carbon footprint?

Irish farming is entering a period of expansion and increased production. The Food Harvest 2020 report has set ambitious growth targets for the sector which, if realised, have the potential to increase the overall carbon footprint of Irish agriculture.

Retailers, food processors and legislation are placing higher demands on farmers to produce food in a more environmentally sustainable way.

In general, Ireland's climate and farm infrastructure are very suited to dairying, cattle and sheep production, which are associated with significant emissions of methane.

In 2010, agriculture contributed almost one third of Irish national greenhouse gas (GHG) emissions. This proportion is high when compared to the EU average of 9%, but reflects the importance of Irish agriculture to the Irish economy.

However, the grass-based livestock production systems that we have in Ireland are highly carbon-efficient, and are associated with a low carbon footprint for livestock produce. A recent study by the European Commission showed that Ireland has the lowest carbon footprint in the EU for milk, and the fifth lowest carbon footprint in the EU for beef.

Under the EU 2020 climate strategy, Ireland is required to reduce national greenhouse gas emissions by 20%.



You can reduce greenhouse gas emissions by optimising your chemical nitrogen use.

Given that carbon efficiency in Irish agriculture is already high, this makes further reductions in greenhouse gas (GHG) emissions increasingly challenging.

How can you reduce your farm's carbon footprint?

The process of calculating the carbon footprint of a farm can be complex. Teagasc is working closely with industry partners, such as Bord Bia and a number of co-operatives, to develop smart techniques for measuring farm GHG emissions from dairy and beef systems. There are number of strategies that Irish farmers can implement to reduce the carbon footprint of their farms. Listed below are a number of measures that livestock farmers can consider:

Improve the genetic merit of your herd

Knowing the genetic merit of your herd is a key component to successfully improving traits of importance on your farm. Teagasc studies have shown that selection for increased milk production, daily liveweight gain and fertility all result in reduced overall farm carbon footprint.

By selecting for these traits, we can improve the overall efficiency of our livestock systems.

Nitrogen use efficiency

By optimising your use of chemical nitrogen, you are reducing greenhouse gas emissions from a) the production of chemical nitrogen and b) the emissions from spreading chemical N. By developing a fertilizer management plan with your adviser, you can ensure that you only buy the chemical N you absolutely need on your farm. You can further reduce your chemical N use by increasing the clover content of your swards.

Spreading slurry during the right weather and growing conditions will maximise the nitrogen that you can extract from animal manures. An overcast calm day in spring is ideal

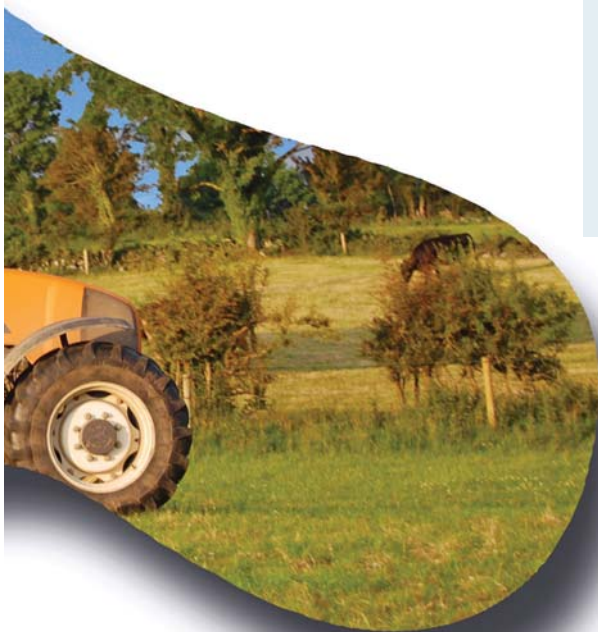
Table 1: Carbon dioxide produced in Ireland V EU average

	Milk	Pork	Beef
Ireland (Kg of carbon dioxide equivalent produced per kg of product).	1.0 kg CO ₂ -eq/kg	4.8 kg CO ₂ -eq/kg	19.0 kg CO ₂ -eq/kg
EU average	1.4 kg CO ₂ -eq/kg	7.5 kg CO ₂ -eq/kg	22.1 kg CO ₂ -eq/kg

why it is good for everyone

Did you know?

- Methane has around 20 times the greenhouse effect of carbon dioxide.
- That 80% of the methane released by a cow comes from belching.
- A cow typically produces 80kg to 100kg methane per year.
- Nitrous oxide has around 310 times the greenhouse effect of carbon dioxide and is released from fertilizer spreading and soil disturbance.



for spreading if ground conditions are suitable.

Increasing daily liveweight gain

This measure is primarily focused on reducing the finishing times of beef animals. If we can increase the daily liveweight gain of our beef systems in Ireland, we can reduce the overall volumes of greenhouse gases from the sector. Improved daily liveweight gain is one of the key metrics in beef production systems and can be achieved through improving the genetics of your herd and optimising feeding systems.

Extended grazing season

Increasing the proportion of grazed grass in the feed budget and reducing the amount of grass silage in the diet improves feed digestibility and quality and in turn reduces methane emissions. It is also recognised that slurry storage is responsible for a significant amount of greenhouse gas emissions on Irish farms. Reducing the length of time that animals are housed means that less slurry needs to be stored on the farm and, therefore, fewer GHGs emitted.

Improved manure management

There are a number of advantages to spreading slurry during the spring time. Weather conditions are generally damper and more overcast, which reduces the amount of nitrous oxide being lost. In addition, spreading during this time of the year means that farmers can direct more nitrogen from their slurry to the growing crop. This will reduce overall chemical nitrogen requirements. By moving to lower emission spreading techniques such as band spreading, trailing shoe or shallow injection farmers can also reduce GHG emissions.

Summary

Efficiency, efficiency, efficiency! The measures outlined in this article focus on optimising the use of inputs on your farm. By implementing them, not only will you reduce your farm carbon footprint, but you will also increase the profitability of your system. Further measures to reduce your carbon footprint will be discussed in future editions.

For further information on the contents of this article, contact your local Teagasc adviser.



Paddy Browne,
Head of Programme,
Crops, Environment
& Land Use
Programme,
Teagasc Oak Park

Sustainable intensification

The agri-food sector is now being held up as the bright light of the Irish economy and the sector with the greatest potential to drive economic recovery.

The sector is entering a new growth era with the removal of milk quotas, the reform of the Common Agricultural Policy and the global increase in the demand for food.

The ambitious Food Harvest 2020 targets must be achieved in a sustainable way having regard to water quality, biodiversity and greenhouse gas emissions.

Agriculture is entering an era of 'sustainable intensification' and, accordingly, Teagasc has decided to mainstream sustainability across all our research and knowledge transfer programmes. 'Carbon Friendly Farming' is an important component of sustainable intensification.

Teagasc 'Carbon Navigator'

At farm level, efficiency is key to reducing GHG emissions. Teagasc is developing a web-based tool called the 'Carbon Navigator'. This simple to use and practical tool will offer farmers and their advisers a novel way to get an indication of how 'carbon efficient' their farming system is and how they compare to other farmers. The system encourages farmers to set targets to improve their technical performance and outlines how these improvements will affect greenhouse gas emissions and on-farm profitability.

The system is currently being developed in conjunction with Bord Bia and will be integrated into their quality assurance schemes. It will be an important tool in supporting the marketing of Irish food products and will demonstrate that we not only produce some of the world's most carbon efficient food but that we are committed to further improving our efficiency.

Why certification?

Consumers are increasingly demanding that goods are produced in an environmentally responsible way. Markets respond to this demand by making various 'eco' claims.

Certification is one way to prove that products come from well managed forests providing environmental, social and economic benefits. It re-assures consumers of the origin of the wood used in timber products.

Take a humble wooden spoon, for instance. How does a potential buyer know that this spoon is not made from illegally logged tropical hardwood? Can the buyer believe the seller's claim that the spoon is 'eco-friendly'? How does the buyer know that local communities didn't suffer because of the production of this spoon?

Independently audited certification schemes aim to provide these assurances: where the wooden spoon came from, what forest management took place, etc. A certified wooden spoon has a full paper trail leading back to the forest from which it came.

An independent organisation carries out an audit and, as a result, will issue a certificate confirming that a forest is being managed in accordance with a certain standard.

Certification schemes

There are several certification schemes, quality assurance schemes, standards, etc, in existence. The two best known schemes operating in Ireland are PEFC (Programme for the Endorsement of Forest Certification) and FSC (Forest Stewardship Council).

Each standard has been developed nationally by a number of 'stakeholders' affiliated to an economic, environmental or social group or chamber. Both schemes comply with an internationally agreed framework of standards.

Types of certification

When people refer to timber certification, two different processes are involved. Forest Management (FM) certification aims to ensure that the management of a forest complies with certain rules and regulations from establishment to harvest.

The second process aims to track the timber once it leaves the forest until it ends up with the customer. This is called Chain of Custody (CoC) certification and follows the total production process as the timber is processed into a wide variety of products from firewood to construction timber, furniture and paper.

Currently, Coillte (www.coillte.ie),



the Irish Forestry Unit Trust (www.iferut.ie) and An Grupa Dubh Dara (www.pfci.ie) have FM certification from FSC in Ireland, while 80 Irish companies, such as Bord na Mona, Munster Joinery and all major Irish sawmills, hold a FSC CoC certificate.

Markets now demand timber certification. Certification is voluntary and nobody is forced to join. However, at Teagasc's nationwide Talking Timber events held during March, representatives from Irish sawmills put it bluntly: get your timber certified.

It is becoming increasingly difficult for Irish sawmills to sell uncertified timber. Although both FSC and

PEFC allow 20% to 30% of uncertified timber, this option is gradually disappearing because of the rapid growth of private timber coming onto the market.

There have already been occasions where Irish sawmills weren't able to take in any more private timber. Talking Timber presentations can be viewed on the Teagasc Forestry website: www.teagasc.ie/forestry.

'I need this like a hole in the head!'

Some forest owners may wonder why these additional requirements are needed: does Ireland not already have a highly regulated forest industry?

Timber

Why it pays to be certified

Sawmills predict that private forest owners will require timber certification within a few years, writes Steven Meyen, Teagasc Crops, Environment and Land Use Programme



But markets require independent certification and certification schemes, such as PEFC and FSC, assist forest owners to demonstrate this commitment.

Certification also requires a very detailed management plan. This can generate additional benefits. A well thought-out management plan can focus management objectives which, in turn, can lead to improved profitability and even new business ideas.

Sustainable forest management and certification can also lead to a better understanding between forest owners and consumers.

The quality of forest management

varies greatly in Ireland. Certification can lead to an improvement in forest management and will differentiate between 'good' and 'bad' management, providing economic, environmental and social benefits to the owner and the wider community.

Getting certification is less about additional paperwork and more about being able to sell your timber.

How much will it cost?

Certification is expensive. Costs are variable and depend on acreage, number of forest owners involved, current management practices, external assistance required, accredited certifica-

tion body retained, etc.

There are a number of options for forest owners. The two main options are individual certification or group certification.

Individual certification can be for a single forest or for several forests with a single owner. The cost of individual certification is likely to be very high and, therefore, restricted to very large forest owners.

Group certification, on the other hand, can be organised for a number of forests owned by different people. Forest owners can formally join the group, agreeing to implement the required levels of management in their forests. A group manager defines management requirements and monitors members' performance.

The group manager can provide support with the implementation and monitors compliance. An external auditor checks the group manager and inspects a random number of group members. This option may well be the way forward for small forest owners.

There are currently 26 Forest Owner Groups active in Ireland, set up and supported by Teagasc Forestry Development Officers. For contact details and location of these Forest Owner Groups, visit the Teagasc Forestry website: www.teagasc.ie/forestry.

New models are being investigated to facilitate the uptake of certification by small forest owners. FSC, for instance, is currently researching Forest Contractors (CeFCo) Certification by developing tools for certification of forestry contractors.

KEY POINTS

- Markets demand timber certification
- There are currently three valid FM certificates (FSC) and 80 CoC certificates (FSC) in Ireland
- Certification will become a necessity for many private forest owners within a few years.
- Group certification appears to be the way forward for Ireland's 16,000 plus private forest owners
- Teagasc-assisted Forest Owner Groups may well play a pivotal role in developing group certification models in Ireland
- Further info: www.teagasc.ie/forestry

Websites of interest:

- www.teagasc.ie/forestry.
- www.irishforestcertification.com
- www.pefc.ie

**Tim O'Donovan, Tillage Specialist,
Teagasc Crops, Environment and
Land Use Programme**

The area of winter oilseed rape (WOSR) increased substantially in 2012 to an estimated 15,000ha, driven by good forward prices and favorable drilling conditions last August and September.

Previous problems such as pigeon grazing, pod shatter and slugs have been overcome in recent years enabling Irish growers to consistently achieve high WOSR yields. The national average was one of the highest ever at 5.0t/ha.

Margins

In *Table 1*, Provisional Teagasc Costs & Returns 2013 are used to calculate expected margins at various yields and prices.

When forward planning a margin from rape, use realistic yield and moisture figures.

The Teagasc Harvest Reports (2007 to 2011) show that the national five-year WOSR yield was 4.3 t/ha at 12% moisture content. This would seem like a reasonable yield to use when planning your figures but be careful to adjust for moisture penalties as most forward prices are stated at 9%.

Recent euro exchange movements added to fuel and fertilizer price rises mean that there are increased costs predicted for the 2013 season.

Growers are advised to talk to their advisors and merchants when drawing up their own crop budgets. A useful crop budget calculator is available free on www.teagasc.ie/crops.

Sowing date

The key to growing high yielding WOSR is getting it established correctly. Based on British research, September sowing will not reduce yields but seedbed preparation must be very good.

Typically, under Irish conditions, a delayed or slow harvest means that rape drilling gets in the way of cereal harvesting and straw baling. However, with rape margins looking promising, rape drilling will become a more critical job at the busiest time of the year. For people who are delayed, modern hybrid varieties are very vigorous and well able to cope with September sowing.

Fertilizer or manures applied will help later sown crops establish that little bit faster.

Drilling method

Trials carried out in Oak Park showed little difference between various establishment systems. The important thing to remember is that



Oilseed options

rapeseed is small but fast to grow and needs good seed-to-soil contact initially. It then needs a relatively loose soil structure as its roots will not penetrate compacted layers. A newer development in establishing WOSR is a seed unit on top of a deep tine cultivator. This system sows the rape in bands over a deep tine that acts to break open the ground where the rape roots will grow.

A very practical benefit of this sys-

tem is that it is carried out by a contractor and is a much faster method of rape drilling than the traditional plough, till, sow system.

So, if you have a lot of work on, consider one of the deep tine cultivators instead of drilling too late or into poor seedbeds with your own equipment.

One key lesson from last year is to apply slug pellets if using the deep tine cultivator.

AN OIL ALTERNATIVE

While oilseed rape dominates the market 'Gold of Pleasure' — also known as Camelina — offers a second option to tillage farmers seeking an oil break crop. Teagasc researcher Andreas Froelich says that while Camelina occupies only a small niche (about 200 acres are being grown), its potential is great. Camelina is used in the manufacture of cosmetics and its content of healthy Omega-3 acids means it is increasingly used in food products.

For growers, Camelina offers all the benefits of a good break crop: It helps reduce disease, leaves nitrogen in the ground for a following cereal and spreads the harvest — it is combined two to three weeks earlier than oilseed rape.

History: "Camelina originates in Scandinavia and has been grown since the Bronze Age," says Andreas Froelich. "It was widely used as a fuel for lighting before electricity and also as a food crop until the 1940s."

Today, there are many other sources of demand for oilseed rape and Camelina may nibble into its market share. Food companies such as Raisio in Finland are focusing on Camelina's healthy fatty acids — Omega 3 —

Omega 6 and including it in food products. These fatty acids are not regarded as highly as those in fish oils but are superior to other vegetable oils. Its fatty acid profile also makes Camelina suitable for manufacturing cosmetics. It is grown in Tipperary and the north east.

Agronomy: "Though it can be grown as a winter crop, Camelina is usually grown as a spring crop, sown in April, and offers a number of advantages," says Teagasc crops programme leader Jim O'Mahony. "Camelina is a relatively low input crop. It requires about 125kg of N, usually doesn't need a herbicide and is less prone to disease than oilseed rape."

The target yield is about a tonne to the acre and with prices at circa €800/t it compares well with the economics of growing oilseed rape.

Bright future: Many farmers are participating in the trend to healthier eating and whether they decide to grow it or not they are likely to encounter Camelina — on their kitchen table.

— Michelle Hogan



LEFT: Camelina oil is used in the manufacture of cosmetics.



Recent euro exchange movements added to fuel and fertilizer price rises mean that there are increased costs predicted for the 2013 season

Table 1: Winter oilseed rape provisional margins 2013 (per ha)

Price @ 9% mc (£/t)			
Yield t/ha (t/ac)	350	400	450
3.5 (1.4)	-30	145	320
4.0 (1.6)	145	345	545
4.5 (1.8)	320	545	770
5.0 (2.0)	495	745	995

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GERMINAL SEEDS

Spring crops doing well on pig slurry



Mark Plunkett,
Teagasc Crops,
Environment and
Land Use
Programme

Pig slurry is reducing fertilizer costs and adding organic matter to continuous tillage soils on these two Bunclody farms.

Farm 1

This farmer had applied pig slurry to his crops of spring barley for the first time. He said one of the main reasons for applying pig slurry to his land was to cost-effectively build soil fertility which had declined in recent years. He also wanted to add organic matter to land that has been in tillage for many years.

A number of fields received 2,000 gallons/acre (22m³/ha) which was supplied and applied by a local piggery. Slurry was incorporated as fast as possible. The slurry tanker and a disc cultivator operated close to each other to help reduce odour and maximise slurry N availability to the following crop.

The pig slurry was tested at the time of application and had a dry matter content of 4.5%. The fertilizer value of 1,000 gallons of this pig slurry was estimated as equal to a 50kg bag of 19-7-20.

Table 1 shows the crop fertilizer requirements for 7.5t/ha spring feed barley based on soil test results and nutrient content of slurry applied. The farmer changed this year from 18-6-12 to 10-10-20 which was a better match for the crop's P & K requirements.

The P and K soil fertility in this field was soil index 1 and 3 respectively. The crop was sown on 15 March and received 2.7 bags/ac of 10-10-20 at sowing plus 2.2 bags/ac of CAN (27% N) on the 27 April.

Pig slurry supplied approximately 30% of the crops N and P requirements (50% of K requirements) as shown in *Table 1*. These crops have tillered extremely well despite the cold weather conditions in April.

Correct levels of P and K in the rooting zone have paid dividends to date in terms of crop tillering, which is an essential yield component in spring barley.

Farm 2

I visited a second farm where pig slurry has been tried and tested over the last three years and this year, due to more experience with the use of pig slurry, a larger proportion of the land was treated.

A number of spring malting barley crops received an application of 2,500 gallons/ac (28m³/ha) of good quality (4.5% DM) pig slurry which was

rapidly ploughed in.

In the past, 18-6-12 was the fertilizer of choice for spring crops on this farm. Over the last number of years 13-6-20 has been applied as the base fertilizer as it supplies the correct P to K ratio for spring barley.

The P and K soil fertility on a number of the fields of this farm was soil index 1 and 2 respectively.

These crops were sown on the 3 March on contract for malting and on this farm grain proteins were low (<9.5%) in 2011. Research to date indicates that organic manures are beneficial in terms of increasing grain protein levels.

The crop received a total of 175kg N/ha as the base yield was 7.5t/ha (135kg + 20kg = 155kgN/ha) and an additional 20kg N/ha was applied as grain proteins were below 9.5% in





PICTURE ABOVE: A full and even crop of spring feed barley that received 2,000 gal/ac of pig slurry

LEFT: Spring malting barley that received 2,500 gal/ac of pig slurry which has tillered very well.



2011. Fertilizer was applied as follows: - 3.25 bags/ac of 13-6-20 at sowing. Nitrogen was split applied (50:50) 25 units/ac applied on the 30 March and the remaining 25 units applied on the 23 April.

The aim of splitting the N top dressing was to ensure sufficient N for grain yield and later N split to improve grain protein.

Table 2 shows the level of N, P and K applied to these crops. The crops have tillered extremely well and look to have good yield potential due to the correct and timely application of N, P and K (slurry & fertilizer).

Quality control

Both farmers complimented the slurry supplier. The aim of the piggery is to supply slurry with a consistent nutrient content from the first to the last load on any given day.

Slurry fertilizer N value is checked by the slurry agent with an Agros N slurry meter each morning before slurry spreading starts, plus a quick check with a slurry hydrometer during the day.

Slurry application rates are adjusted based on these tests. This was very evident as crops were uniform across the field. This information is conveyed to the farmer so the correct adjustments can be made to individual field fertilizer programmes. Incorporating carefully managed pig slurry into a crop fertilizer programme makes both economic and environmental sense.

Table 1: Fertilizer programme for feed barley receiving pig slurry

	Nutrient requirements kg/ha (units/ac)	22m ³ / ha pig slurry kg/ha (units/ac)	Crop balance required kg/ha (units/ac)	Fertilizers applied (bags/acre)
N (Index 1)	155 (124)*	46 (37)	109 (87)	2.7 bags/ac 10-10-20, 2.2 bags / ac CAN
P (Index 1)	49 (39)	15 (12)	34 (27)	
K (Index 3)	85 (68)	48 (38)	37 (30)	

* 7.5t/ha (135kg + 20kg = 155kg N/ha)

Table 2: Fertilizer programme for malting barley receiving pig slurry

	Nutrient requirements kg/ha (units/ac)	28m ³ / ha pig slurry kg/ha (units/ac)	Crop balance required kg/ha (units/ac)	Fertilizers applied (bags/acre)
N (Index 1)	175 (140)*	59 (47)	116 (93)	3.25 bags/ac 13-6-20, 1.8 bags / ac CAN
P (Index 1)	49 (39)	20 (16)	29 (23)	
K (Index 2)	100 (80)	62 (49)	38 (30)	

* 7.5t/ha (135kg + 20kg + 20kg = 175kg N/ha)

The 'Irish' potato in southern Ethiopia

Teagasc and the Irish charity Vita have teamed up with Irish potato farmers and their Ethiopian counterparts to launch a potato 'Centre of Excellence' in east Africa

The aim is to combine agricultural research, international aid and private sector agriculture to put food on plates for the two million people of Gamo Gofa and boost incomes for the region's 50,000 potato farmers. In Ethiopia, the potato is commonly known as the 'Irish potato'. It can provide Ethiopian families with higher yields than crops like wheat or maize on their small farms of two acres or less.

Grower John O'Shea from Piltown in south Kilkenny brings long experience in potato farming and agri-business. After his second visit to Ethiopia in May, John said: "If I can help the Ethiopian farmers avoid some of the mistakes I have made in the last 35 years, then I will have made a real contribution." John is a member of the Irish Potato Federation, which is supporting the initiative.

Teagasc potato breeder Denis Griffin explains the potential. "Currently, farmers in the region are achieving just over eight tonnes per hectare. With good seed and better agronomy, they could grow over four times as much. The aim is to boost yields using a sustainable, science-based approach."

Denis Griffin and Teagasc colleague Rogier Schulte, together with Wageningen University and Research Centre in The Netherlands, will supervise research undertaken by Ethiopian students within the Teagasc Walsh Fellowship scheme.

Research will address areas such as: design of quality seed potato production systems, the potential effect of climate change; and how best to spread and implement new knowledge and techniques, so that farmers' livelihoods benefit directly from the research.

John Weakliam, Vita CEO, said: "This project is about technology transfer and business partnership and not about aid. This will allow farmers to own their own destiny."

Key partners in the Ethiopian potato Centre of Excellence are the Ethiopian Institute of Agricultural Research and the International Potato Centre based in Peru, who have bred potato varieties adapted to Ethiopian growing conditions. The project does not involve trade or transfer of seed or ware potatoes between Ireland and Ethiopia.

Her Excellency Lela-Alem Gebreyohannes, Ethiopia's ambassador to Ireland said: "The Vita Potato Centre of Excellence is an exciting step for the people of Ethiopia, and should serve as a template for replication across Africa." "Teagasc is promoting sustainable agriculture at lower latitudes within a new programme," says Dr Rogier Schulte. "The Vita Potato Centre of Excellence in Africa is the first step in this new initiative and an excellent example of international collaborative research and development on sustainable food security."

•If you would like to support this unique project contact Teresa in Vita on 01-8734303 , or visit www.vita.ie

More about Vita

Vita is an Irish development agency whose mission is to tackle household food insecurity through community-led sustainable agriculture projects, which are scalable and replicable, with a special focus on women. The 2012-15 programme goal is to create a material improvement in nutrition for 250,000 households. In the past three years, with support from the Irish Government and in partnership with the Sisters of Mercy Western Province in Galway, Vita and government partners have championed a community led approach to development in Ethiopia.

In Ireland, local communities are also getting involved.

They are being led by residents from Kill village, Co Kildare, who have raised significant funding to support the development of the Vita Potato Centre of Excellence. Employees from the Bank of Ireland, Electric Ireland, Dublin City Council and other organisations also support Vita's work in Ethiopia.

Below: Prof Gerry Boyle, Teagasc Director and Her Excellency Lela-Alem Gebreyohannes, Ethiopia's ambassador to Ireland at the launch of the Ethiopian Potato Centre of Excellence.





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tillage

The slug pub

And other ways to control pests and diseases in vegetables



Stephen Alexander,
Teagasc Crops,
Environment and
Land Use Programme

Growing vegetables can be hard work. You've just spent the day planting your spuds, transplanting brassicas and sowing a range of root crops. And when it's all done you sink into your favourite chair, relax and dream of glorious harvests to come.

Two months later, the potatoes have gone down to blackleg, the cabbage has been decimated by pigeons and greenfly are attacking the carrots after the dog's dug up the plot.

It doesn't have to be like that. If you plan ahead and take some precautions you can avoid most of these problems. But first of all you have to arm yourself with knowledge of what's likely to attack. I have listed the most common pests and diseases in the accompanying tables.

If you're growing brassicas you are almost guaranteed a visit from cabbage root fly; this common pest lays eggs at the base of the plant which hatch out into small white legless maggots that eat the roots. You'll notice that your plants aren't thriving and they'll wilt on a warm day. Carrot fly does something similar to members of the carrot family – carrots, parsnips, celery and parsley.

Aphids and caterpillars are also very common pests that attack a wide range of vegetables but particularly favour brassicas. A bad attack of mealy aphid on Brussels sprouts can render the crop unusable, and during warm summers, caterpillars can decimate your greens unless counter-measures are taken.

Because of our damp climate, slugs and snails are an ever-present threat.



Table 1: Common pests

Problem	Symptoms	Control
Cabbage root fly Attacks all brassicas	Stunted plants with blue tinged leaves and white maggots in the roots	Protect plants with a disc around the base or use covers
Carrot fly Attacks carrots and parsnips	Stunted plants with roots riddled with small maggots	Use covers or create a plastic barrier 70 cm high around the plot
Caterpillars Wide host range	Holes in leaves	Pick off or spray with a insecticide
Aphids Wide host range	Distorted leaves covered in honey dew	Use covers or spray with a oil based insecticide
Slugs Wide host range	Holes in leaves, seedlings demolished, worst in wet seasons	Beer or sugar solution in a sunken margarine container will attract and drown slugs; otherwise pick off or use pellets sparingly

They can demolish rows of young seedlings overnight and riddle your potatoes with holes. Mind you, they don't attack all vegetables; most herbs are resistant and they normally don't bother onions to any extent.

The worst diseases in the vegetable patch are those that are impossible to get rid of. White rot of onions and clubroot in brassicas spring to mind. If attacked you may give up growing these crops for 10 or more years. Both of those examples are soil borne, but other diseases can blow in on the wind. The classic examples are blight, which attacks potatoes and tomatoes, and rusts that mainly affect onions, leeks and garlic. Other ones to watch

out for are ring spot on brassicas plus downy mildew on onions.

So what can we do to ward off pests and diseases? You've a choice of using cultural or chemical controls – or maybe a combination of the two.

Fewer chemicals available

There are precious few chemicals available to the back garden vegetable grower – a lot of them have been removed from sale in the last few years. Dithane (mancozeb) is still available for blight control but note that the small amateur pack is being withdrawn from the market and can only be sold up to 1 August this year. Other than mancozeb there are virtu-



The best way to control pests in the vegetable plot is to cover them with fleece or 'bionet'. These are covers that are designed to physically keep pests away from your crop and, if properly used, are 100% effective.

Table 2: Common diseases

Problem	Symptoms	Control
White rot Attacks all members of the onion family	Foliage turns yellow and wilts, plants with few roots	None. Good rotations will help prevent it occurring
Ring spot Common leaf disease of brassicas	Circular spots on the older leaves	Choose varieties that are more resistant
Club root Attacks all brassicas except kale	Wilting of plants in dry weather with distorted swollen roots	Practice good rotations. Lime the soil to a pH of greater than 7.4
Potato blight	Brown areas of the stem or leaf that can rapidly spread through the crop	Preventatively spray with Dithane. Alternatively grow an early variety and chop the tops off at the end of July

ally no other fungicides available to the amateur.

Cypermethrin and pyrethrum are available, under various trade names, for caterpillar control, and though aphids are also on the label, neither is very effective against this pest. There's a new product on the market for carrot fly control – Plant Rescue. This is based on lambda cyhalothrin which commercial growers use to control this troublesome pest.

There are products based on plant oils that are effective against aphids, mealy bugs and caterpillars. These work by coating the insect with oil that blocks its breathing tubes and causes death by suffocation. They

work but you have to be able to directly hit the insect with the spray. There are no insecticides available for cabbage root fly control.

Cultural control means using a non-chemical approach to pest and disease containment. It includes good husbandry technique, sowing dates, sensible use of nitrogen and making use of barriers and covers.

The best way to control pests in the vegetable plot is to cover them with fleece or 'bionet'. These are covers that are designed to physically keep pests away from your crop and, if properly used, are 100% effective.

Fleece is a light woven material and bionet is a heavy duty plastic net.

They work by blocking the pest but allow light and water through. You can lay them directly onto your crops but it's probably best to make a frame covered in the material.

Bionet is the more expensive option but will last for up to 10 years and longer. So, once you have your cover set up you can relax, knowing that at one fell swoop you've got yourself covered against flies, aphids, caterpillars, flea beetle, birds, cats and dogs.

The slug pub

Which just leaves slugs! I find that a mix of chemical and cultural measures works best. They like cover, so if you keep your plot tidy, there are fewer places for them to hide.

Slug pellets, used carefully, will also help to reduce damage. Pick a product that's based on ferric phosphate rather than methaldehyde. It's eco-friendly, has a low toxicity and biodegrades to release iron and phosphorus, which can then be taken up by plants as nutrients.

Another advantage with this type of pellet is that there are no dead slugs left strewn around; as soon as the slug ingests the pellet it stops feeding, moves back to shelter and dies out of sight. And the few slugs that are left after all those controls can be drowned in a slug pub.

Sink a margarine container into the ground; half fill it with beer and sit back and wait. They just can't help themselves!

You can also utilise different varieties to help you sidestep certain diseases. Plant breeders are beginning to introduce club root resistant brassicas, and onions with resistance to downy mildew. If one of the varieties you are using succumbs to a disease, try different ones.

Knowledge is power and to help you get the best out of your veg patch there's an updated version of the *Teagasc Guide to Growing Vegetables (5th Edition)* recently published. It's available on the Teagasc website under Publications or email stephen.alexander@teagasc.ie for a free hardcopy.



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Botanic Gardens

Inspiration from Bloom and Chelsea shows

Christopher Heavey, Teagasc Education Programme, National Botanic Gardens, Dublin, reports from these key events in the horticultural year

I have been very lucky again this year to have had the opportunity to visit the Chelsea flower show and Bord Bia's increasingly successful Bloom in the Phoenix Park.

There is always something new and exciting to absorb. This year, Chelsea was full of water rills and scaffolding – which belonged to our own Diarmuid Gavin. Diarmuid trained with the Teagasc College of Amenity Horticulture at the Botanic Gardens in Glasnevin. His garden consisted of a seven-storey pyramid of scaffolding rising like a beacon over the event.

Mary Reynolds was the first Irish winner of a gold medal for her garden at Chelsea in 2002. Mary also trained at the Botanic Gardens. She was up against stiff competition that year and did an incredible job creating a mystical Irish beauty. Her next door neighbour at the show that year was Prince Charles who had recently received a plant of *Deutzia* 'Alpine Magician' which had been specially propagated at Teagasc Kinsealy for his visit to Ireland in 1995.

The great thing about Chelsea is the fact that there is something for everyone; this year's show was no exception. There was a really spectacular floral display by Irish florist Jenny Murphy of Flowers by Moira in Co Meath, who won the Florist of the Year accolade.

The Naul Gardening and Flower Club, in the heart of horticulture in north Co Dublin, achieved a silver medal for their very beautiful tiered arrangement, an incredible achievement considering the level of competition in this, the most prestigious flower show in the world.

At Bloom this year, Jane McCorkell won gold for her traditional garden design which was inspirational but also people-friendly, judging by the enthusiastic response from the public. Jane has won gold on four occasions in recent years; this is her fifth.

Her connection with Teagasc was as a teacher in landscape design at War-



Taoiseach Enda Kenny with designer Jane McCorkell in her garden entitled 'Bord na Mona Growise My Garden', which won the overall prize at Bloom. INSET: Dunshaughlin, Co Meath, florist Jenny Murphy who was a winner at the Chelsea Show.

renstown College, Co Meath.

When you have visited one of these great shows your mind is filled with fantastic ideas and you are exploding with the desire to get out into your own garden to build something or plant something or prune something.

Rills, as I said, were the order of the day in Chelsea and I came away motivated to build a water feature. The rill feature is a good one, providing a soothing, natural sound as water flows between the stones. Crucially, it is also safe, with no deep water to endanger children.

None of these ideas came out of thin air – even Diarmuid's pyramid! For the most part they were developed in the minds of individuals who were once students of a Teagasc college or a similar college. They have learned about the plants, how to use them, how to build structures with them, how to create something wondrous and wonderful.

I love going to both Chelsea and Bloom but for different reasons. They are both great horticultural events and we shouldn't make the mistake of trying to compare them. There is a

strong feeling of encouragement and hope for the future of horticulture in a visit to Bloom; you can feel the tradition building.

Chelsea, on the other hand, is almost an institution and, as such, has achieved the greatest of respect from both the public and the industry in equal measure. Long may they continue to inspire.





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