

TEAGASC Today's farm

MAY-JUNE 2011 VOLUME 22 NUMBER 3

Advice on business, production, environment, and countryside issues



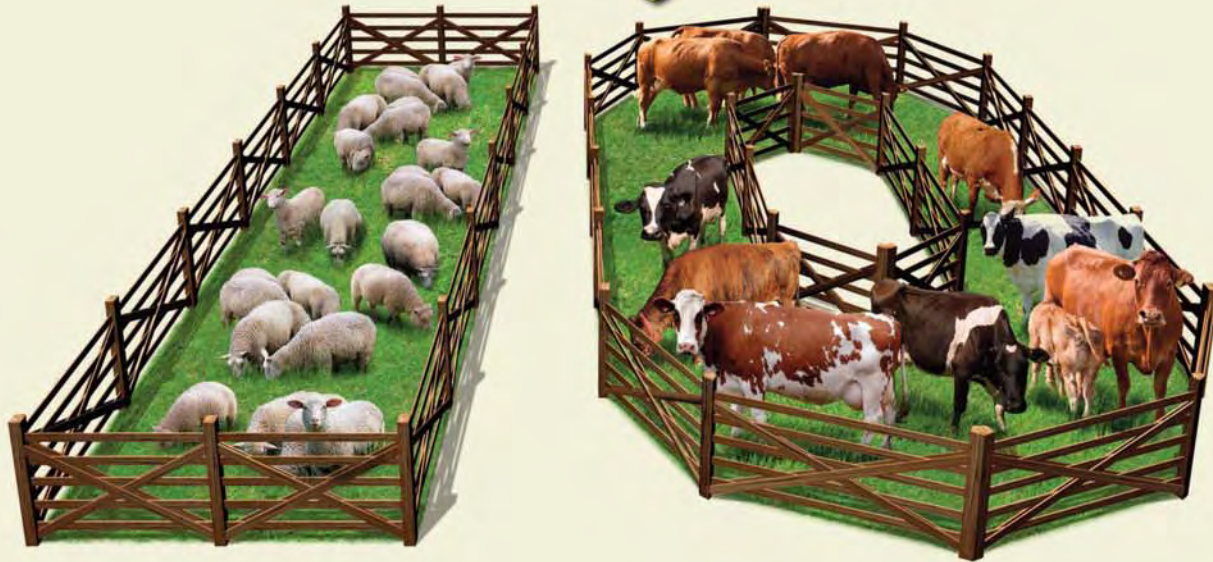
Beware of the bull.

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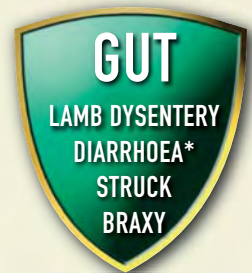
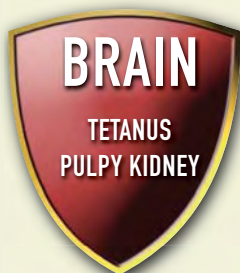
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


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COVER | caption:

Even an apparently docile bull can turn aggressive in an instant. Constant vigilance and great care in bull management is essential if we are to reduce the large number of bull (and cow) related injuries on farms. Teagasc safety officer John McNamara (pictured) outlines the steps needed in his article on page 18.

PICTURE: Mark Moore



ENVIRONMENT
Nutrient management is a sweet success — 34

Is é Today's farm an iris do chliant Teagasc. Bíonn altanna teicniúla ann faoi chúrsaí déiríochta, faoin eallach, faoi chaoirigh agus faoin gcuradóireacht, agus faoi go leor eile. Is minic altanna faoin timpeallacht agus faoi dheiseanna éagsúlaithe feirme san iris freisin. Gné an-tábhachtach den iris is ea na haltanna faoin gcaoi le cúrsaí gnó na feirme a láimhseáil. Ar na topaicí eile a chlúdfófar amach anseo beidh táirgeadh fuinnimh ar an bhfeirm, an fhraoiseacht, an ghairneoireacht, srl. Agus beidh altanna ann ó thráth go chéile faoi chúrsaí feirmeoireachta thar lear freisin.

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COMMENT

Report aggressive bulls



Mark Moore
Editor,
Today's farm

Young men are programmed to pit their wits against dangerous situations. Hence we have 'boy racers', bungee jumpers and, to some degree, contact sports.

In Pamplona, Spain, few are deterred by the injuries, and even death, which can occur when 'running with the bulls'.

Closer to home, who among us hasn't bragged about a narrow escape with a farm bull or newly calved, and highly protective, cow? Bulls, of whatever breed, are only semi-domesticated and can be fatally aggressive when provoked, however unintentionally.

As with investments, past performance doesn't guarantee anything; a heretofore 'quiet' bull can deliver a lethal surprise.

While AI offers huge advantages in terms of genetic progress, bulls will remain a feature of beef and dairy farming for years to come. Bull temperament is genetically determined — to the same degree as milk yield in cows — so we can breed for docility.

First we must know which lines are aggressive. Teagasc and ICBF would like to hear of bull attacks, providing you have the animal's tag number. If you would like to help by reporting a bull or cow attack, ring freephone 1800804014 between 9am and 5pm.



Past performance doesn't guarantee anything; a heretofore 'quiet' bull can deliver a lethal surprise

Upcoming events

ORGANIC FARMING OPEN DAYS 2011, JUNE TO SEPTEMBER

Summer organic farming open days

A nationwide series of national organic farming open days will take place this summer. Teagasc, the Department of Agriculture, Marine and Food and organic organisations invite all those interested to see organic farming in practice and to meet and speak with producers and the sector's experts. All walks will start at 2pm.

BEEF

Thur, 23 June	Offaly	Sean & Orla Clancy, Tonelmore, Cloghan
Thur, 30 June	Monaghan	Mark Duffy, Bellview, Clogher, Ballybay
Wed, 6 July	Laois	Eamonn Holohan, Barney, Grogan, Rathdowney
Fri, 8 July	Sligo	Danny Kilcullen, Seaview House, Enniscrone
Wed, 20 July	Cork	Pat O'Connor, Mullinroe, Clondrohid, Macroom
Thurs, 21 July	Galway	Teagasc, Mellows Centre, Athenry
Thurs, 18 Aug	Meath	John McLoughlin, Moneymore, Trim
Mon, 12 Sept	Longford	Gerry Fitzsimons, Mullahoran, Kilcogy, Cavan Via Longford

DAIRY

Thurs, 8 Sept	Limerick	Sean Condon, Fanningstown, Crecora
Tues, 13 Sept	Tipperary	Fintan Rice, Everardgrange, Fethard

HORTICULTURE

Mon, 27 June	Kildare	Liam Ryan, Spratstown, Ballytore
Tues, 28 June	Cork	Colm O'Regan, Ballyregan, Dunderrow, Kinsale
Thurs, 14 July	Wexford	Desmond & Olivia Thorpe, Knockroe House, New Ross
Wed, 27 July	Wicklow	Alan T. Pierce & Mark Winterbotham, Balleshall, Auhtrim
Thurs, 28 July	Galway	Gerard & Sylvia Langan, Ballisnahyna, Ower, Headford
Wed, 7 Sept	Galway	Padraig Fahy & Una Ni Bhroin, Beechlawn, Ballinasloe

CEREALS

Wed, 29 June	Kildare	Alan Mooney, Portgloriam, Kilcock
Tues, 5 July	Kilkenny	Patrick J Tobin, Main Street, Johnstown
Tues, 19 July	Westmeath	Pat Lalor, Ballard Farm, Kilbeggan

EUROPEAN YOUNG SHEEP FARMER EVENT 2011, 4 JUNE

European Young Sheep Farmer competition set for Cillin Hill

The European Young Sheep Farmer 2011 event will take place in Cillin Hill, Kilkenny, on 4 June.

This highly successful competition, co-funded by the EU, was last held in Paris in February 2010 as part of the Salon International d'Agriculture.

The aims of the championship are:

- To increase interest in sheep farming among agriculture students.
- To give a modern picture of sheep breeding and management.
- To initiate a European network with regard to the sheep industry.

Participants from the following have been invited: Ireland, Northern Ireland, Wales, Scotland, England, France, Holland, Germany, Italy and Spain.

The Irish team will be drawn from

competitors at the national competition held as part of Sheep 2010 in UCD Lyons Estate in June 2010.

Irish team

They are Matthew Murphy, Kildare/Kildalton College, Paul McGrath Waterford/Kildalton College, and David Argue, Cavan/Ballyhaise College.

The main skills examined are:

- Technical knowledge quiz, based on management, husbandry, health, nutrition and markets.
- Sheep breed identification.
- Quad bike and trailer manoeuvring.
- Carcase grading.
- Drafting sheep.
- A wool/shearing-related skill.

TEAGASC NATIONAL BIODIVERSITY CONFERENCE, 25 & 26 MAY 2011

Conserving farmland biodiversity

The Teagasc National Biodiversity Conference will take place from 25 to 26 May 2011 in the Ferrycarrig Hotel, Wexford.

The theme of the conference is 'Conserving Farmland Biodiversity — lessons learned and future prospects'.

Through a combination of keynote speakers, presentations and posters, this two-day conference aims to present the latest evidence and research on current and emerging practices and policies that affect farmland biodiversity.



BIOENERGY 2011, 16 JUNE 2011

Showcase event for wood energy

Presented jointly by Teagasc, the Sustainable Energy Authority of Ireland and COFORD, the BioEnergy 2011 conference takes place on Thursday 16 June 2011 at the EPA headquarters, Johnstown Castle Estate, Co Wexford.

This conference is now firmly established as the showcase event for wood energy in Ireland and, once again, the event combines a professional conference with practical demonstrations in one comprehensive event.

The event will showcase the use and deployment of solid biomass, in particular wood energy, and will raise awareness across all sectors, from the landowner to the end user.



For more information on any of our events, please visit www.teagasc.ie/events



DAIRY OPEN DAY, 29 JUNE 2011,
MOOREPARK, FERMOY, CO CORK

The best advice to grow your business post milk quotas

Moorepark '11, the Teagasc national event for 2011, will take place on Wednesday June 29 at the Teagasc Animal and Grassland Research and Innovation Centre, Moorepark, Fermoy, Co Cork. Set against the backdrop of milk quota removal in 2015, volatility in milk price and a positive market outlook for dairy products due to significant growth in world demand, this event is a necessity for all commercial dairy farmers.

Opportunities

There will be significant opportunities for Irish dairy farmers to profitably grow their business once milk quotas are removed.

However, only those who fully capitalise on Ireland's inherent competitive advantage associated with grass growth and utilisation will benefit most in this deregulated production environment.

Moorepark '11 is an ideal opportunity to see at first-hand the results of the comprehensive research programme at Moorepark and to meet Teagasc research and advisory staff.

OAK PARK CROPS OPEN DAY, THURSDAY
23 JUNE 2011, 2PM TO 7PM

Meeting production targets

A chance to see the field experiments at Teagasc, Oak Park, Carlow, and discuss with researchers and crop specialists the latest methods for optimising crop production.

A wide range of field experiments will be on display, including:

- Oilseed rape agronomy.
- Cereal disease control.
- Winter wheat and spring barley varieties.
- Weed control in cereals.
- Nitrogen management in cereals.
- Soil and cultivations.

BUTCHERY AND SMALL SCALE MEAT PRODUCTION WORKSHOP, TEAGASC FOOD RESEARCH CENTRE, ASHTOWN, DUBLIN 15, 25 AND 26 MAY 2011, 9.30AM TO 4.30PM DAILY

Butchery and small scale meat production workshop

A two-day butchery and small scale meat production workshop, in conjunction with the National Organic Training Skillnet (NOTS), will take place at the Teagasc Food Research Centre, Ash-town, Dublin 15 (an approved abattoir and processing plant) from 25 to 26 May 2011. Fee: €225

The workshop is aimed at those who are already selling or considering processing and/or selling meat from their own herd. During the two days, demonstrations will be given on how a side of beef, a lamb and a pig can be butchered into retail cuts.

There will also be a practical session on burger production.

The workshop will include topics such as:

- Factors affecting the quality of meat.
- Meat presentation/the potential uses of the various cuts of meat.
- The legislative issues involved in producing and selling meat and meat products.
- Labelling.
- Handling of meat — food safety issues.

CROPS AND ENERGY OPEN DAY, 23 JUNE 2011, OAK PARK, 9.30AM TO 1PM

Practical on-farm bioenergy

A practical walk and talk through the energy crops at Teagasc, Oak Park, Crops Research Centre, Carlow, will provide a valuable insight into the latest research on Ireland's energy crops.

Over 3,000 hectares of energy crops have been planted, mainly for the heat and electricity markets. The following areas will be discussed:

- Economics of energy crops versus conventional agriculture
- Miscanthus and willow crop management.
- Miscanthus and willow harvesting, transport and storage.
- Launch of the 35kW Sterling biomass CHP unit by Minister Pat Rabbitte.
- Willow chip drying costs and methods.
- Applying sludge to energy crops.

- The importance of quality and standards in bioenergy crops.
- View boiler and pelleting unit.

This practical on-farm day will provide a great opportunity to meet with the Teagasc Oak Park researchers and get the real message on bioenergy.

GREENFIELD DAIRY FARM OPEN DAY, 4 MAY, CLARA, CO KILKENNY, 11 AM

Greenfield open day

An open day will be held on Wednesday 4 May at the Greenfield dairy farm. Topics will include a review of the physical and financial performance of the farm for 2010 as well as plans and budgets for 2011. All are welcome.

Grassland groups

'Grass Roots' | project 2011 to 2013 host farmers

Name	Nearest town	County
Tim O'Leary	Blarney	Cork
Niall O'Loughlin	Kildare	Kildare
Paul Kelly	Oranmore	Galway
Jim Garry	Ennis	Clare
Sean Roberts	New Ross	Wexford
Ger and Margaret Pardy	Birr	Offaly
John Fitzgerald	Kilmeaden	Waterford
Ky Vaughan	Mullinahone	Tipperary
Rathcunikeen Dairy	Thurles	Tipperary
Alan Hughes	Bagenalstown	Carlow

A new grassland management project, supported by Germinal Seeds, is up and running in nine counties.

Ten new 'host farmers' have been identified (*see table*). Teagasc is looking to identify the final two 'host farmers' for this project; one in each of counties Laois and Westmeath. In addition, Teagasc is looking for interested 'support farmers' to get involved in this project.

For a fee of €200 per year, a 'support farmer' can attend 12 group meetings

on the nearest 'host farm' and fully participate in the measuring and decision making processes. This is ideally suited to a dairy farmer who wants to improve his/ her grassland measurement and decision making skills. If you are interested, please contact Niamh

Allen at 025 42244 or niamh.allen@teagasc.ie with your name, contact details and the 'host farmer' you wish to be associated with. If you are from counties Laois or Westmeath and are interested in being a 'host farmer', you should also contact Niamh Allen.



'Tip Top' Teat Tips

- Spray or dip every teat, after every milking throughout lactation.
- Use a good quality product, containing emollient to keep teat skin in tip top condition.
- Cover the whole barrel of the teat, from tip to top.
- Check operator technique.
- When dipping, clean out dip cup when teat dip gets low; don't just top up the dip.
- Check your coverage by calculating how much disinfectant you use at each milking.



Check spray pattern regularly by spraying on paper.

— e.g. using three litres a day, milking 100 cows: 3,000ml/day divided by 100 cows x two milkings/day = 15ml/cow/milking
 • Recommended amount = spray 15ml/cow/milking or dip 10ml/cow/milking.

- Check the spray pattern of the equipment regularly by spraying onto a piece of paper. Hollow or 'doughnut' patterns are not satisfactory.

— Finola McCoy

Teagasc launch road maps for farming and food sector

The Food Harvest 2020 report sets out ambitious targets for the agriculture and food industry.

Teagasc has outlined the developments required for each of the major farming enterprises and the food sector over the next seven years to 2018.

The nine Teagasc road maps, covering dairy, suckler beef, pigs, sheep, tillage, forestry, horticulture, food and the environment, summarise the expected changes in the shape and size of the individual sectors in the context of the main market and policy issues

facing Irish producers in each enterprise.

The road maps specifically set out the technical performance required at farm level to meet these targets. If you are interested in getting hold of a copy, contact your local Teagasc office.

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Breeding management priorities in suckler herds



Liam Fitzgerald
Teagasc Athenry &
James Keane
Teagasc Longford

THE cost of maintaining the suckler cow is a substantial overhead in all suckler systems. We know from the eProfit Monitor and other sources that the variable cost of keeping a suckler cow and calf to the weaning stage is about €400 on the more efficient farms and can rise to €550 on less efficient farms. A further €350 to €450 per cow can be added to cover fixed costs, resulting in a negative market-based income from suckling in most cases.

Nevertheless, the top 10% of weaning producers who completed a Profit Monitor in 2009 had a gross margin of €545 per cow and an income from the market of €175 per cow in what was one of the worst years for beef farming incomes.

Since the production for sale or further feeding of a weanling is the sole output from a suckler cow (apart from her cull value), it is crucial to maximise the weaning value per cow, as well as curtailing costs.

The important figure in this regard is the value of weaned calves per herd and per hectare. Every farmer who is a participant in the Suckler Cow Welfare

Scheme received a five-year Beef Trend Report from ICBF at the beginning of this year. This report gives key fertility indicators for each herd. From it we can see that the average calving interval (period between one calving and the next) is 406 days and the average number of calves produced is 0.78 per cow per year.

All the same, the top 15% of farms have a calving interval of 366 days and each cow produces 0.94 live calves to 28 days of age.

An estimate is shown in *Table 1* of the difference in value of weaned calves that can be attributed to herd fertility in a 50-cow herd using the data from the five-year Beef Herd Report.

The table indicates that in a 50-cow herd, the weaning producers in the 'average' category are losing a potential €6,000 to €7,000 per year due to below target herd fertility.

In *Table 1*, it was assumed that weaning weight is the same in both farm situations.

In the ICBF report, the top 15% have a calving spread of just over two months, whereas the average is 5.5 months. Where the calving season stretches out over 5.5 months, weaning weight is substantially lower than on farms with a tight calving spread.

Table 2 shows a difference in weaning weight of 65kg in a spring calving herd between a calving spread of 12 weeks

and one of 18 weeks duration, where both herds started calving on 1 February and calves were weaned on 15 October.

Figure 1 shows the calving pattern on a compact calving herd (12-week calving season) and one with a longer calving pattern (18-week calving season), where the difference in calving spread results in 65kg higher weaning weight in favour of the compact calving herd.

The aim is to have 60% of cows calved in the first three weeks of the calving season and calving completed within a 12-week period.

Five-year Beef Trend Report

The performance of the top 15% of herds in the five-year Beef Trend Report from ICBF sets the target for every suckler producer. In brief, the key targets relating to fertility are:

- A calving interval of 365 days.
- 0.94 live calves per cow.
- A calving spread of less than 12 weeks per herd (spring or autumn calving).
- Not more than 5% empty cows.
- Less than 5% calf mortality; 2.5% around calving and 2% up to 28 days.

It is very worthwhile to study the fertility indicators in the report to see how your herd rates in relation to the average and, more importantly, the top 15%.

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Figure 1. Distribution of calvings in two spring-calving herds

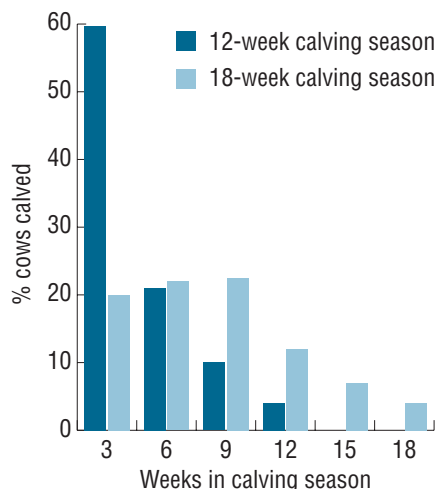


Table 1 | Difference in value of weaned calves in 50-cow herd due to herd fertility between average and top 15%

	Herds in Suckler Cow Welfare Scheme	
	Top 15%	Average
Calves/cow/year	0.94	0.78
Calving interval (days)	366	406
No of calves weaned/50 cows	47	35
Calf weaning wt (kg)	300	300
Weight of weaned calves (kg)	14,100	10,500
Difference in weight/50 cows		3,600kg
Value @ €1.90/kg		€6,800

Table 2 | Effect of calving spread on weaning weight

	Calving spread (weeks)	
	12	18
Date calving started	1 February	1 February
Date calving finished	20 April	6 June
Date of weaning	15 October	15 October
Average weaning wt (kg)	307	242
Difference in weaning wt (kg)		65kg

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Is action required?

Having studied the figures in the five-year report, take note of the ones where your herd is substantially below the targets achieved by the top 15%.

The main causes of unsatisfactory fertility are:

- Poor body condition score (BCS less than 2.0) at calving and mating.
- Low bull fertility.
- Inadequate heat detection, if using AI.
- Excessive calving difficulty.
- Herd health problems — BVD, leptospirosis, infections and deficiencies.

In spring calving herds, body condition score should be at least 2.5 at calving and not below 2.0 at turnout. Cows will then be in a state of rising body condition by mating, i.e. at or close to 2.5.

Thin cows should get preferential quality grass or 2kg concentrates/day for a short period up to breeding. The group most likely to need attention are the first calving heifers, especially if aiming to calve at around two years old.

Bull fertility is a regular problem. Up to 25% of bulls are sub-fertile, temporarily infertile or completely infertile. Monitor cows closely for repeats in the first three weeks of the breeding season. In a healthy herd where cows are calved for 50 days or more, if there are more than 40% repeats there will be grounds for suspicion of bull infertility.

Heat detection

Heat detection is the single biggest task if using AI. Some aid to heat detection should be employed, the best being a young, vasectomised, bull. Other aids include steers, tail painting and the use of colour scratch patches or adhesive 'heat seekers'.

Conception rates can be reduced by 25% or more following a difficult calving. Replacement heifers should be two thirds the mature cow weight at first mating, and avoid the following: sires with high calving difficulty figures; cow condition score at 3.5 or more at calving and cows with highly muscled hind quarters or known poor pelvic size or shape.

Herd fertility

One of the main impacts of BVD infection is on herd fertility. It causes lower conception rates and a higher than normal number of empty cows. More seriously is the birth of persistently infected (PI) calves that continue to spread infection. Action to identify and eliminate these animals from the herd is the most important control measure.

Leptospirosis infection causes abortions, normally in the second half of pregnancy, or the birth of weak calves. It has also been linked to lower conception rates and irregular return to heat.

Uterine infections can result from handling cows in unhygienic conditions. Wear sterile gloves when handling cows at calving and aim to calve cows in a clean environment.



FARMERFOCUS

Longford farmer in top 15% on herd fertility

JOHN Kelly farms 78 suckler cows near Moydow, Co Longford. The herd is split into 48 autumn calvers and 30 spring calvers. The cows are mostly half and three-quarter bred Limousin and are bred to Limousin sires (apart from a small number bred to Belgian Blue AI), producing calves that are at least three-quarter bred Limousin. Bull calves from the autumn calving herd are sold for export in June at about nine months of age while the heifers are kept for replacements in his own herd and the surplus sold as replacements to other suckler farmers.

Bulls from the spring calving herd are finished at 20 to 21 months. John works part-time off the farm and pays a lot of attention to minimising calving difficulty, which is one reason he has kept using the Limousin sires. Difficult calvings are rare, contributing to very low mortality and good conception rates. Calf mortality was only 1.4% in 2010, while the national average was 6%.

But John really excels in relation to herd fertility. In 2010, according to the HerdPlus report, the herd had a calving interval of 366 days (national average was 406 days) and produced 0.97 calves per cow/year compared with the national average of 0.78. John's herd even beats the top 15% of herds on that score, where calves/cow/year on the top 15% is 0.94. Another indicator of herd fertility on John Kelly's farm is that only one cow out of 74 did not have a calf in 2010.

The calving spread is also quite compact. In the autumn calving herd, 93% of cows calve within a 12-week period from August to October and in the spring calving herd, 97% calve within 12 weeks from February to April. Next year John plans to have no April-born calves by removing the bull on 15 June this year.

For the future

- John feels he has too many groups of cattle on the farm and intends to decide on one calving season. He is veering towards an autumn only calving herd at present.
- Another issue is gradual movement towards an almost pure Limousin cow herd though there may be concerns about losing the benefits of hybrid vigour. Nevertheless, the figures show there is no loss of fertility so far.
- In the current system, the autumn-born bull weanlings are sold in June at about 400kg for €800 per head. John may use more Belgian Blue sires on the autumn herd in future to increase sale value of the weanlings.

John Kelly, pictured with his daughter Avril.

drystock

The secret's in the name

Ciara Byrne

Teagasc Advisory Centre, Johnstown Castle

The farmers who formed the Wexford 'Sheep for Profit Discussion Group' in 2009 made their intentions clear when choosing the name

“OUR aim is to use the meetings to share information and, ultimately, improve profits on our farms,” said chairman Joe Byrne, who farms on the foothills of the Blackstairs Mountains close to Bunclody. “I find that being a member of a discussion group has provided many benefits, such as improving profit margins, flock management and grassland management.”

The group meet every two months to discuss current topics with an average of about 15 farmers attending.

“Members learn a lot from one another; even small tips can improve flock management,” said Ciara Byrne of Teagasc Johnstown Castle, who facilitates the group.

“One of the recurring topics is grassland management. This is an area with potential on a lot of sheep farms which

“ We stay focused on improving profitability and the combination of Teagasc research, group discussion and monitoring profit really helps us to achieve that

Joe Byrne, group chairman



can improve profits with little investment.”

Thomas Rafter, who has a mixed sheep and tillage farm, near Enniscorthy, Co Wexford, is a keen member of the group. Thomas has approximately 330 ewes on 33ha of grassland, giving a stocking rate of 10 ewes per hectare (1.9 LU/ha). All of the ewes lamb from 26 February. Thomas's ewes are mainly Suffolk and Charollais crosses, with a Belclare ram bought in recent years to breed replacements. He uses Charollais and Suffolk rams as his terminal sires.

Management

“The group is a great place to discuss management decisions,” said Thomas. “For example, up to 2009 we brought in hogget ewes as replacements, but the increasing price of these led us to think about breeding from our own ewe lambs.

“Many of the ewes were getting old and I knew I needed to bring in a large number of replacements. The high price of hoggets, coupled with the aim to go more towards a closed flock policy, encouraged me to breed from my own ewe lambs in their first year.”

For the past two years Thomas has

picked out the best of his ewe lambs at lambing and weaning time, and kept these for breeding. “I aim to select ewe lambs from ewes that are good mothers and have not presented any problems at lambing,” said Thomas. “We use teaser rams to encourage the ewes to come into heat and rams are put with the ewe lambs two weeks after the main flock.”

Tom feels that having the ewe lambs well over 50kg and in good condition going to the ram led to successful breeding. In 2010, 8% of those that went to the ram scanned empty, while those that took the ram scanned 1.56 lambs per ewe. For the 2011 crop the ewe lambs went to the ram two weeks earlier and 85% went in lamb at a scanning rate of 1.47 lambs per ewe.

“We keep the ewe lambs separate from the main flock and feed them well throughout the gestation period,” said Thomas. “We feel that's the secret to having ewe lambs lambing down in good condition with plenty of milk.”

This year Thomas had a mixture of Belclare and Suffolk cross ewe lambs and he noticed that most of the Belclares lambed down before their comrades, which he feels has future potential to



Thomas Rafter, who farms near Enniscorthy, with adviser Ciara Byrne.

Lamb | sales pattern

% Lambs sold by:	2009	2010*
End May	11% (46)	3% (13)
End June	51% (190)	48% (174)
End July	78% (96)	48% (0)
End August	97% (81)	59% (44)
End September	98% (2)	88% (112)
End October	100% (10)	100% (47)

*The reason for the drafting rates in 2010 being lower than 2009 is that there were more hogget lambs on the farm and these were born in April. Also, with the poor spring and lack of growth at that time, Thomas said he was two weeks behind other years in his sales targets.

reduce his lambing spread. "The main flock started lambing on 26 February this year and there were only a few ewes left to lamb by 1 April."

With the main flock, Thomas's aim is to scan two lambs per ewe, and to sell 1.6 lambs per ewe, including ewe lambs. This figure was achieved in 2009, but in 2010 it dropped to 1.5 lambs per ewe due to the smaller crop from the ewe lambs and a high replacement rate of 30%.

Profit monitor

Not surprisingly, given their name, the group promote the use of the Teagasc Profit Monitor. Thomas completed a profit monitor for the past two years and has found a similar message coming from both of them. Output, at 15 to 16 lambs/ha is excellent and is within the top third of producers, but variable costs are diluting profits.

In common with many sheep farmers, Thomas feeds a lot of meal in order to be able to draft lambs for sale early and on a regular basis. This frees up grass to finish the remaining lambs quickly and to ensure that ewes are in good condition pre-mating. This is evident from his 2010 sales pattern when 50% of the lambs

were sold by 1 July and 88% by 1 October.

Sugar beet production was significant in Thomas's area before the beet factories closed. The beet tops, which were a great source of winter feed for ewes, are sorely missed since the ewes are housed in early December to ensure there is an adequate supply of grass for the spring.

These ewes are fed good quality hay and a 15% crude protein ration 10 weeks prior to lambing. Protein is increased to 20% three weeks out from lambing. This level of meal feeding reaps its own rewards in that all of the ewes are in excellent condition at lambing down and lack of milk is rarely a problem. But the resulting meal costs are high.

Sheep farms with a tillage enterprise have the option of looking at the possibilities of growing a catch crop, such as stubble turnips or rape, to feed ewes over the winter period, and allowing grassland to be closed early.

The high meal feeding has prompted Thomas to try to get more benefit from his grassland. He is considering splitting large fields into paddocks. He could then graze out these pastures quicker and, hopefully, improve pasture quality in the summer months. "Controlling grass

quality during the summer is a challenge," says Thomas. When grass starts to get stemmy, performance and thrive are reduced significantly. By having more control over grass, paddocks could be taken out for silage or hay to ensure a continuous supply of high quality leafy grass." The group have also discussed introducing creep gates to encourage lambs to forward graze, which would further reduce the dependency on meals and maintain high growth rates. By creep grazing lambs ahead of ewes, trial work has shown that lambs can weigh 2kg heavier at weaning and, therefore, are two weeks closer to slaughter.

Another hot topic for the group is re-seeding and Thomas is considering sowing a tyfon/grass seed mixture in early May. The inclusion of tyfon at re-seeding has been shown to increase daily live-weight gain and eliminate meal feeding of lambs prior to slaughter.

"The group are a very friendly bunch, and there's a social element to it, but we stay focused on improving profitability and the combination of Teagasc research, group discussion and monitoring profit really helps us to achieve that," concludes group chairman Joe Byrne.

drystock

Back to basics

When well known agricultural contractors and farmers, Paddy, Maria and Robert Tobin from Johnstown, Co Kilkenny, decided to switch to organic cereal production, they raised a few eyebrows among their peers. Having reached exceptional expertise in conventional cereal growing, it was an unexpected move for the father and son team. **Pat Barry** reports

'G OING back to the way our forefathers grew crops', is how Paddy puts it. "As organic cereal growers, an understanding of the biology of the soil, nutrient management and rotation design takes on even greater importance, as the luxury of artificial fertilizer and herbicide and pesticide is no longer available," said Paddy.

A grass clover break is an integral part of organic crop rotation, acting as both a weed suppressant and a fertility builder — raising soil nitrogen reserves for subsequent cereal crops. This poses a dilemma for many conventional stockless tillage farmers who consider organic, as it means no 'cash' crop for at least two years.

Under the Organic Farming Scheme, however, there is an additional payment of €200 per hectare (maximum 40 hectares) for land cropped with a green manure during the first two years. In or-



der to market produce as organic, the land must first undergo a two-year conversion period, during which the land is farmed to organic standards but produce is sold as conventional.

To compensate for loss in production and higher costs associated with organic farming, the Organic Farming Scheme pays €212 per hectare for the first two years and €106 per hectare when the farm is fully organic. Crop rotation on organic farms must be a balance of exploitive crops, e.g. oats and leguminous fertility building crops, i.e. red clover ryegrass

Red clover perennial ryegrass is the

TOBIN FARM | open day

- The Tobin farm, part of the Teagasc / Department of Agriculture demonstration farm network, will host an open day on Tuesday 7 July at 2pm. The event will provide an opportunity to see best practice on organic cereal farms.

fertility builder of choice on the Tobin farm, but rather than mulch it back into the ground it is ensiled and fed to cattle housed on straw bedded sheds during the winter months. There was a small three-bay slatted shed on the farm when it was conventional, but a six-bay 50-foot loose shed was constructed to comply with organic standards.

The red clover silage is fed to cattle provided by John Purcell of Good Herdsman in a 'bed and breakfast' arrangement. Cattle are weighed on arrival and departure and weanling cattle on silage alone averaged 0.67kg liveweight per day over the past winter. Not alone is the grass clover crop now a cash crop, but the cattle bedded on conventional straw are a valuable source of nutrients for the cereal crops.

As conventional farmers, the Tobins grew mostly barley and sugar beet; in fact it was the demise of the sugar beet industry that prompted their considera-



Pat Barry and Paddy Tobin study a crop of organic triticale.



LEFT: Paddy Tobin, Pat Barry and Robert Tobin with some of the organically produced beef animals on their farm.

ABOVE: A very clean crop of triticale on the Tobin farm.

Table 1 | Rotation plan, Tobin farm

Year	Crop
1	Red-Clover Ryegrass
2	Red-Clover Ryegrass
3	Oats
4	Triticale
5	Oilseed Rape
6	Oats

tion of the organic option. This, coupled with poor margins from conventional tillage, sealed the decision to convert some of the farm to organic. “We were cautious initially and switched part of the farm to organic,” said Robert. The success of the organic venture is indicated by the fact that the entire farm is now organic.

Robert added: “Initially, we decided to dip our toe in the water and convert some of the farm. We quickly found that though yields dropped, the prices received for grain was much higher and we didn’t have the expensive input bills of the past. This meant more cash in our pockets at the end of the year.”

Identifying a market prepared to pay a premium price is fundamental to profitable organic farming. Organic cereals for animal feed command €250 per tonne at harvest, and oats for the porridge market achieve up to €350 per tonne. Organic triticale, which yields upwards

of four tonnes per hectare (1.6 tonnes per acre), is sold at harvest to other organic farmers. Organic oats, which yields upwards of five tonnes per hectare (two tonnes per acre), is sold to Flahavans of Kilmacthomas for organic porridge oatlets.

Organic oilseed rape is sown on contract for a local organic poultry farmer; this yields 2.5 tonnes per hectare (one tonne per acre).

“Organic sceptics would have you believe that an organic cereal crop would contain nothing but weeds and nutrient deficiency in the crop. Our experience shows different,” said Paddy Tobin. “We control weeds with good seedbed preparation, false seedbeds and inter-row cultivation using a Garford weeder. This weeds between crop rows, without damaging the crop, through the use of a computerised camera vision guidance system.” The Garford weeder has an added benefit, according to Robert, who said that disturbance of the soil causes a mineralisation of soil nitrogen which benefits the growing cereal plant.

Pest and diseases are controlled by a well designed rotation (*Table 1*), resistant varieties and good soil nutrient management. Organic crops tend to have a stronger cell structure which can help to reduce losses.

A good rotation includes deep and shallow rooting crops, a mix of nitrogen demanding and nitrogen fixing crops, weed suppressing and weed susceptible

crops and adequate break periods between crops. Rotation design on organic farms is farm specific and depends on many variables, including crop requirements on farm, market opportunities, soil fertility and previous cropping history.

It is very important on organic farms to replace nutrients removed in crops sold off farm. The Tobins buy in significant amounts of conventional straw which they use to bed cattle, organically approved dairy sludge from Glanbia, Ballyragget, and used straw from local stables, which is composted on farm. Healthy soils with good fertility create the ideal medium for healthy crops.

With five years experience of organic farming the Tobins are delighted with the results of their decision to farm organically and are aiming to lease land on a long-term basis and convert it to organic to increase their land area under organic cereals.

“ Identifying a market prepared to pay a premium price is fundamental to profitable organic farming

Tipperary groups aim to boost



The number of beef discussion groups in Co Tipperary has doubled over the last 12 months

SPEAKING at the Teagasc National Beef Conference 2011, Aidan Murray Teagasc beef specialist, Grange, analysed why returns from beef sucklers are often disappointing. He concluded that:

- Insufficient output is one of the main reasons for poor profits on suckler farms. Although price is often blamed, farmers need to target areas in which they have control, within the farm gate. These include increased stocking rate, better breeding, animal performance and better grass utilisation, as targeted in the Teagasc/*Irish Farmers Journal* BETTER farm beef programme. It is clear that there is potential for significant gains.

- The use of accurate information in terms of financial and physical data is crucial not only in highlighting the strengths and weaknesses of a farming system and monitoring progress, but in laying down targets to keep both farmers and advisers focused on profitability.
- The full potential of grazed grass on many cattle farms is not being exploited. The programme has confirmed that with a targeted approach, the value of good grassland management can be clearly demonstrated, as well as the cost savings it can deliver.

Philip O'Connell, who farms near Kellenaule in South Tipperary, is already on his way to implementing these recommendations. He has com-

pleted a Teagasc Profit Monitor and has established a paddock-based system of grazing on his farm.

"I was encouraged by Leonard Betts of Teagasc Clonmel to take these steps and both of them led to shocks — negative in the case of the profit monitor and positive for the paddock grazing.

"When I looked at the lack of profitability shown by the Teagasc Profit Monitor I was taken aback and had to really ask myself what we have been at in recent years. The paddock grazing system was more positive because we quickly started growing a lot more quality grass than we did before."

Philip admits his production system is still evolving but currently his suckler

profit in beef suckler herds



ABOVE: Philip O'Connell, Meadhbh Freaney and Leonard Betts.

LEFT: The Anner group on the farm of Philip O'Connell.

“ A lot can be achieved through the uptake of proven on-farm practices. Discussion groups provide the ideal vehicle for drystock farmers to improve their business.

herd consists of 50% Limousin cows and a Limousin bull. “The Teagasc Profit Monitor clearly shows that if we want to make money, we have to finish animals faster and keep costs down by maximising the use of grass.”

Philip recently hosted a visit from the Anner Cattle Discussion Group. “This is

one of four new cattle discussion groups in Tipperary (there are now eight cattle discussion groups in Tipperary) which will play a significant role in supporting the Food Harvest 2020 vision,” said Donal Mullane, regional manager, Teagasc.

“There’s huge potential for farmers to get involved in, and benefit from, groups. Tipperary advisers set a target of identifying 80 potential members and the new groups emerged from that initiative.

“Farmers need to get a greater return from their enterprise; a lot can be achieved through the uptake of proven on-farm practices and technologies. We believe that discussion groups provide the ideal vehicle for drystock farmers to improve their business. Farmers meeting on a regular basis with a good facilitator can make significant progress in the management of their business.”

Meadhbh Freaney and Leonard Betts, who are joint facilitators of the Anner suckler group, believe that farming in

isolation can be very difficult. Discussion groups give farmers a great opportunity to pool their knowledge in dealing with day to day issues as well as planning for the future.

“The groups will be focusing on profitability, breeding, herd health, grassland management and environmental issues,” said Meadhbh. “The Anner group is very new but there is great enthusiasm among the members who, like Philip O’Connell, are willing to change their system to raise profitability.”

James Singen, who farms an 80-cow suckler herd, hadn’t been a member of a discussion group before joining Anner. “It has to be useful to be able to go and see what other people are doing and what works for them,” said James. “You learn a lot by trading ideas within the group and discussing the knowledge that the Teagasc advisers bring.”

Leonard Betts pointed out that the group members set the agenda. “We will shape the meetings to suit the members,” said Leonard. “Anything that can potentially improve the profitability of the suckler enterprise can be included, with the emphasis laid on topics which are of greatest concern to the members.”

The Anner group plan to visit the Teagasc Grange open day later in the year. “They’ve had one or two problems with the Derrypatrick herd, but it’s better that they make the mistakes rather than us,” said Philip O’Connell. “And much of what they are recommending has already worked on my farm.”

Preventing 'cattle attacks'

15% of farm workplace deaths are livestock-related



John McNamara
Health and Safety
Officer, Teagasc

INJURIES arising from working with cattle have been increasing over the last decade. About 15% of farm workplace deaths are stock-related, of which about half are bull attacks.

An estimated 65% — two thirds — of all farm workplace injuries (1,800 per year) are livestock-related, causing injuries such as broken ribs and damaged organs.

The pattern of increased injuries when handling cattle is attributable to the facilities used, less frequent contact by farmers with animals and not enough attention being given to breeding for docility. In association with the Health and Safety Authority and ICBF, Teagasc plans to work with farmers to reduce the toll of injuries associated with livestock farming.

The following four areas need to be targeted for improvement:

- Livestock handling facilities
- Human-animal interaction
- Breeding
- Safety with bulls.

Livestock handling facilities

Facilities play an essential role in preventing accidents by providing a means of controlling animals and allowing easy access for routine husbandry and veterinary tasks. To help prevent accidents, keep walkways and work surfaces clear of obstructions. Provide slip-resistant footing for workers and livestock with roughened concrete ramps and floor surfaces to prevent falls.

As any farmer knows, cows have a strong maternal instinct and can be aggressive when protecting their calf after birth. With the busy spring calving season nearly over, now is the time to consider changes for next season. Installing a well-designed calving gate is a change that many farmers have found to be a good investment.

Human — animal interaction

Cattle have a panoramic field of vision, which means they can see everything around them except what is immediately behind their hindquarters. Therefore, approaching from the side or front can be less startling to these animals than approaching from behind.

Cattle have sensitive hearing and are agitated by shouting, barking dogs and sudden movements. They also have poor visual depth perception and need time to adjust to changes in lighting and the presence of a stock person. Cattle form lasting impressions of unpleasant, painful or frightening events which may result in future handling problems.

All this calls for giving enough time to herding when animals can sense, see and hear the stock person in a positive way. This approach to herding very much fits in with modern high output and profitable beef systems. These have a rotational system of grassland management where cattle are moved by the stock person on foot and the animals associate the stock man with positive things. Positive herding has been associated with less stress in cattle and increased performance.

In contrast, herding in set stocking situations using a jeep or ATV results in a loss of the 'relationship' with stock, which leads to aggressive and unpredictable behaviour.

Breeding for docility

Docility in cattle is about 30% to 40% inherited, which means that there is about the same scope as in breeding for milk yield in dairy cows. This means that this trait can be gradually improved by breeding over time. In addition, the arrival of genomic selection in cattle means that breeders can potentially use genetic analysis to identify less aggressive strains of cattle.

However, a key requirement of all these developments is to have a comprehensive database with accurate information on docility which will assist with preventing injuries to farmers in the future. Accordingly, farmer recording is vital to make progress with docility over time.



Farmers can improve the docility of their herd by culling aggressive cows (4% of animals, on average, are aggressive) and by not breeding from their offspring.

Safety with bulls

Bulls present an ongoing risk, especially when they are at pasture. There is no 'safe' breed of bull; five different breeds have killed farmers in recent years. Nor is there a 'quiet' bull as accident investigations generally find that the victim's family considered the bull to be 'quiet' before the attack.

Older farmers are most at risk, with over half of deaths due to bull attacks occurring to farmers over 65 years of age.

Precautions with bulls at pasture

- Fields should be securely fenced and gates locked. Avoid using fields close to public access and display warning signs where necessary.
- Aggressive or difficult bulls should never be allowed to run with the herd.
- It is a good idea for a strong chain, which touches the ground, to be fitted to the ring.
- Always keep the bull in your sight. A tractor or farm vehicle should be used as a mobile sanctuary.
- When separating a bull from the herd, have two adults present and use good cattle handling facilities.
- Do not allow children into a field where a bull is running.



Always keep the bull in your sight. A tractor or farm vehicle should be used as a mobile sanctuary.

TEAGASC/ICBF | 'Cattle Attack' project

- Teagasc and ICBF would like to hear from any farmer who has been attacked by an animal (bull, bullock, cow, heifer) from either a dairy or beef herd. This information will help to identify problematic cattle strains or family lines associated with animal attacks and to investigate possible genetic relationships between weaning and adult cattle docility scores.
- The key piece of information required is the full tag number of the animal causing the attack. Once the tag number is known, it does not matter how long ago the attack took place. A freephone number has been set up for farmers to supply the information : **1800 804014 from 9am to 5pm.**

“ The pattern of increased injuries when handling cattle is attributable to the facilities used, less frequent contact by farmers with animals and not enough attention being given to breeding for docility



Facilities play an essential role in preventing accidents by providing a means of controlling animals and allowing easy access for routine husbandry and veterinary tasks.

Reseeding

The key to rejuvenating swards

Gráinne Hurley

B&T Dairy Adviser,
Teagasc Killarney

PAT McMahon, who is milking 88 cows just outside Castleisland, Co Kerry, believes reseeding has a vital part to play on his dairy farm. This year, Pat is planning to reseed 15% of his farm. In 2009, like many others, he ran into difficulty when he ran out of grass; this proved expensive in an already difficult year.

Pat had taken on a large block of leased land which hadn't been reseeded in many years and he was getting very poor grass growth. He decided that to get the most out of the leased block he should begin an aggressive reseeding programme.

Annual reseeding, and learning how to measure and budget grass, has halved Pat's meal bill. He has completed the Teagasc Profit Monitor for each of the last four years and knows exactly how much it is costing him to produce a litre of milk.

His feed cost in 2008 was 4.98c/litre, but by last year, he had more than halved his feed bill to 1.89c/litre despite a 20% increase in cow numbers. Even during the difficult year of 2009 Pat's meal bill dropped to 2.56c/litre, which he attributes to better grass measurement and better use of grass.

It has become clear that volatility is here to stay. A consistently low cost sys-



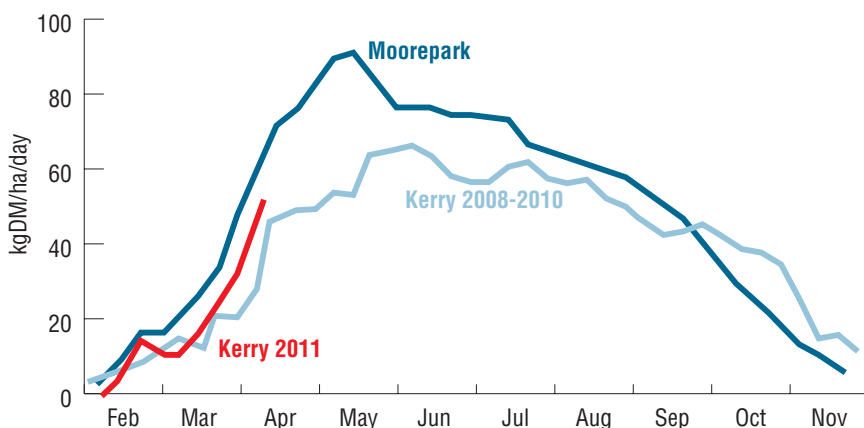
Pat McMahon measures grass covers by cutting and weighing a representative sample.

tem is the answer to the challenge of price and weather volatility. Compact spring calving and a grass-based diet is proven to be one of the lowest cost systems. Spring milk producers must aim to increase the amount of high quality grass grown and maximise grass utilisation. Reseeding is vital to this and needs

to be done more on Irish farms.

Local grass growth data has been collected from 15 to 20 farmers across Kerry since 2008. These farmers, who are farming different soil types and stocking rates, walk their farms weekly and do a grass cover. From this, a grass growth curve has been drawn up for the local area.

Figure 1: A comparison of the Moorepark 10 year grass growth curve and a 3 year average of Kerry grass growth



Growth rates

Figure 1 shows that grass growth rates in the spring are well below those of Moorepark. This is mainly attributable to the lack of reseeding. A survey of 200 Kerry Co-op milk suppliers, carried out by Philip Creighton of Moorepark in 2009, found that only 63% of those surveyed reseed annually and only 40% reseed 10% of their farm annually.

Research has also highlighted that an old grass sward (10 years plus) is 20% less productive than a new reseed. This is due to weeds and weed grasses creeping into the sward which are less productive than perennial ryegrass and this is most apparent in spring.

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- HerdPlus from ICBF (Profit through Science)
- The FBD Young Farmer of the Year Award
- The Farmers Journal FBD National Farmyard Awards
- Macra 3C Discussion Groups for young farmers

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RESEEDING | main points

- To reduce costs, it is vital to increase the amount of reseeded.
- Aim to reseed 10% of the milking platform this year and get into a regular annual pattern.
- Even though fuel and seed costs have increased this year, you will still get a return from the cost of reseeded within two to three years.
- Talk to your discussion group or local Teagasc adviser and learn to measure and budget grass which will put more money in your pocket.

It is common to hear farmers say that urea doesn't work for them in the spring — it is the old sward rather than the fertilizer which is at fault. If these farmers want to achieve 'normal' grass growth from these poor swards in early spring, they would have to increase their fertilizer by 20%. With urea at €405/tonne, that's an expensive addition to get the same response.

Pat feels that it is vital to first carry out a soil test. He said that by addressing any lack of soil nutrients he'll get a better response to fertilizers applied. A lot of his leased ground had a soil pH of less than 5.5. Research has shown that where soils have a pH of 5.5 or less there is little or no uptake of phosphorus. In a year when the cost of fertilizers has soared, it pays to get the soil tested and apply compounds accordingly.

Pat decided that after doing his soil tests he would apply slurry to paddocks with the lowest level of phosphorus as it was much cheaper than applying chemical phosphorus.

Spring or autumn reseeded?

"I would prefer to do all my reseeded in the spring, but with increasing herd size, I need to take off more silage so I'll be doing half of it in the autumn," said Pat. He finds that with a spring reseed the new sward is back into his grazing system quickly.

He burned off nine acres during the first week of April this year. He put his maiden heifers in it after five days to graze it out. Pat then spread two tonnes of lime/acre before he tilled the ground. This will increase the soil pH and will neutralise the effect of acid release as the old grasses and weeds decay, which could adversely affect grass seeds. Pat is hoping to have the new reseed back into his grazing block within 60 to 70 days.

Pat is planning to increase grass growth by reseeded at least 10% of the farm annually as herd size is increasing. However, he believes grass measurement, which has become a central part of his management over the last three years, is also key. "Grass measurement has helped to prevent grass surpluses and deficits," he said. "Last summer

there were a few occasions when we ran tight on grass due to dry conditions but measuring the farm covers weekly helped to overcome major problems without needing to feed meal."

Pat is part of the CFS discussion group. In 2008 and 2009 the group took part in a grass measuring/budgeting project on one of the group member's farms. The group met every three weeks on the host farm and their adviser showed them how to measure the grass using cutting and weighing.

As the farmers gained more confidence, they started to 'eyeball' grass covers. The group also learned how to make key decisions based figures such as growth rate, demand and rotation length, and used the grass wedge during the summer.

In 2009, the group decided to set up mini grass groups comprising of four neighbouring farmers who met outside the usual monthly group meetings. The mini groups would meet on one of the four farms weekly. The four farmers would walk each paddock and do a farm cover. "After our walk we make three key decisions as a group. This could be to take out meal, increase/decrease fertilizer or close up a paddock for bales — depending on the farm cover. It gives me more confidence to make a decision when there are four heads thinking rather than one," Pat said.

Pat's mini grass group started measuring again this year on 20 January and did an opening cover on each other's farms. They have met weekly since 15 February. By getting the opening farm cover done, Pat was confident to let the cows out to grass on 24 January. "I followed the spring rotation planner but I missed the 30% grazed target by 1 March — I only had 22% grazed at this stage. I decided to leave the bulling heifers to grass early in March to speed up the rotation, which meant that I reached the 66% target grazed by St Patrick's day.

"This meant that I finished the first rotation on target on 9 of April and I had plenty of grass at that stage."

Pat began breeding the cows on 10 April, after starting tail painting on 1 April. "As I'm still building herd size, I've enough ground to leave the cows to grass in January, but I'll do a closing and opening grass cover to make sure I have enough grass," he said.

“ To reduce your costs on the farm it is vital to increase the amount of reseeded





Pat and Gráinne Hurley plan grazing strategy (left).

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The silly season for grass quality



John Donworth
Teagasc Limerick

MANAGING the grass plan can be tricky at this time of year because, around mid-May, the grass plant changes from a vegetative state to a reproductive state. Coming through the months of March and April, the grass plant behaves itself and, provided you manage it correctly, you will have high quality grass ahead of the cows on a continuous basis.

This is not to say that you cannot continue to have high quality grass ahead of the cows during May and June. It just gets a bit more difficult. Why? The objective of every grass plant is to reproduce itself. This means that it will do all in its power to produce a seed head and spread that seed into the surrounding environment.

If the grass plant achieves its objective, you have allowed it to grow too long. Every grass plant has only three leaves. It produces a new green leaf approximately every seven days. So, after 21 days, it will not produce any new green leaves.

If the plant is left any longer than 21 days, the stem of the grass plant will start to elongate and a seed head will finally emerge six to seven days later. At this stage, grass quality has been severely compromised. To complicate matters that little bit further, the grass plant can go to seed at various times over the 21 days in the grazing cycle. For instance, if the plant comes under pressure because of very wet weather, severe threading or even drought, the plant can go to seed after 14 to 15 days.

So, you have been warned, and if you don't heed the warning, it will cost you



money in lost milk production.

May and June are the major milk producing months. Typically, cows will peak in May and then drop 2.5 litres per month. Milk protein percentage will be seriously challenged in late May and all through June, particularly if grass quality is less than ideal. Milk protein percentage should rise by 0.05% each month as the herd moves through the main grazing season.

However, this rarely happens at farm level, and milk protein percentage can hit the floor in June. This typically happens when one gets an intense period of growth, rotation length moves to 24 or 25 days and cows are, for all intents and purposes, grazing meadows.

So how can you ensure that cows are going into swards of high quality grass for the next two months? High quality grass means grass with a high leaf content (DMD 82), no dead material at the base and stem amount kept to the minimum. You will have two grazing rotations completed by 1 May. Indeed, some of you may be half way through the third rotation. What shape the sward is in now will have been influenced greatly by what kind of a grazing job you did in the previous two rotations.

As I write this, grazing conditions couldn't be better. Cows are cleaning swards down to the base (4cms) and all bodes well for grass quality in May.

What grassland management tools have we at our disposal to ensure we continue to do a good grassland management job in the key months of May and June? Firstly, we must ensure that cows are fully fed. They are currently being bred and they are also hitting peak yield.

A number of grassland management tools have been developed over the past three to four years.

The summer grass wedge is one such tool. To complete a grass wedge for your farm, you must firstly calculate the ideal pre-grazing yield for your herd. Pre-grazing yield is calculated by multiplying stocking rate by cow intake by rotation length plus residual.

Table 1 shows how cows stocked at four cows/ha need to be going into covers of 1,600kg. But, if the cows were only stocked at three cows per ha, and if you did the same sum, then the cover ahead of the cows needs to be only 1,234kg.

This year the recommendation is that regardless of stocking rate, the pre-grazing yield should not be greater or lower than 1,500kg to 1,600kg. Why the change for 2011?

Work carried out at Moorepark between 18 April and 17 October 2010 at three different pre-grazing yields gave us some very interesting information. This work was carried out by Michael O'Donovan and his colleagues. The three different pre-grazing yields chosen were 1,000kgs, 1,500kgs and 2,300kgs. The swards were grazed down to 4.5cms. The overall results showed that regardless of grass cover ahead of the cows, there was

Table 1 | Pre-grazing yield

Stocking Rate X	Cow intake X	Rotation Length +	Residual	
4	18	21	100	1,533kg grass DM



no difference in the milk production performance.

However, the results show that cows that grazed the lowest cover, i.e. 1,000kg, spent, on average, an extra 90 minutes grazing each day. There was no difference between the 1,500kg and 2,300kg covers.

The results also showed that less grass was grown where cows were confined to grazing covers of 1,000kg. Total grass dry matter production for the period was 13 tonnes of dry matter at a pre-grazing yield of 1,000kg compared with 14.4 tonnes of dry matter where the pre-grazing yield was 2,300kg. That's a difference of 10% in grass growth.

So what does this research work tell us about how we should manage grass swards during May and June?

- Cows should be going into covers of 1,500/1,600kg.
- Cows should not be going into covers of 1,000kg. The farm will grow less grass and less silage will be made. The effects of drought will be more severe. Management will need to be top class and you will need to be walking the farm every third day to ensure you have enough grass ahead of the cows.
- Cows should not be turned into covers of 2,300kg. Why? It will be very difficult to control grass covers and, unless grassland management is of a very high standard and the farm is walked a few times a week, grass will get ahead of the cows. You will also be constantly taking out bales, but you will make extra silage.

Finally, if you have to take out bales, let them bulk up to covers of between 2,500kg and 3,000kg DM before cutting them.

“ Pre-grazing yield is calculated by multiplying stocking rate by cow intake by rotation length plus residual

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Six strategies to avoid superlevy

By the end of March a significant number of farmers had turned blue from holding their breath while waiting to find out whether a milk superlevy would be imposed. Remember that spring 2010 was poor for grass growth and we still came close to exceeding the national quota. For spring 2011, milk supplies have been running strong. Farmers should take a strategic approach to managing quota and consider all of the options. Here, **Laurence Shalloo** of Teagasc Moorepark outlines the advantages and disadvantages of each approach



Strategies | to avoid milk superlevy

Strategy	Impact	Advantages
1 Remove concentrate supplement from diet	*Action required where 350,000 quota holder could potentially be 10% over quota Each 1kg reduction in concentrate reduces milk production by 0.75 — 1.0 litre *Reduce meal feeding by 40 tonnes (570kg/cow).	Reduces farm feed bill More efficient use of grass Potential to reduce meal feeding on majority of farms
2 Rearing and feeding calves.	Each calf reared could consume a minimum of 250 litres (4.5 litres / day for 56 days), and up to 300 litres. *Hold and rear all of the calves in the herd.	Reduces calf feed bill. Timely - potential to lower February/March supplies.
3 Where possible, purchase additional milk quota.	Limit of 100,000 litres per quota exchange. Price will vary between co-op areas. *Potential cost between €2,000 to €8,000	Allows farmer to expand without threat of super levy. Option in certain co-op areas
4 Once a day milking — options include: Entire lactation First 4/8 weeks of lactation Late lactation	Yield (volume) is reduced by 26%. Yield (milk solids) reduced by 20%. *Milk herd once a day for approximately 20 weeks.	Can start at any time of the lactation High milk solids, therefore higher milk price on milk delivered. Potential to increase stock by 25% without increasing output. Could practice on some of herd. Lower labour requirement. Improved cow body condition.
5 Shorten lactation.	*Yield reduces by approximately 10% if the herd is dried off six weeks early.	Simple to implement. Lower feed bill. Improved cow body condition.
6 Herd improvement — cull high SCC cows cull low EBI cows cull lame cows	*10% reduction in numbers (mature cows) reduces supply by 11.5%.	Potential of higher milk price by removing cows with high SCC, i.e. SCC bonus. Young herd, potential to grow herd in future. Strong cull cow prices.



Disadvantages	
	Reducing meal in Feb/Mar — grass availability may be an issue, depending on stocking rate. Reducing meal feeding in April — difficult to judge if quota will be an issue by end of year.
	Increased labour requirement. Profit from calf rearing is variable (especially in super levy situation). Feeding milk in April / May - difficult to judge if quota will be an issue by end of year. Feeding equipment required. Disease risk if calves are purchased
	May be detrimental for profit depending on quota price and costs of production. Supply of quota not available in all co-op areas.
	Herd needs to have low SCC for this strategy to be viable. Requirement to target cost reductions to ensure the full advantage is achieved.
	Loss of high value milk. More seasonal production for processors. Cash-flow issues on farm.
	Limited as to number of animals that can be culled.



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Kale can make a great winter feed for replacement heifers.

Consider forage kale for weanlings



Emer Kennedy
Teagasc, Moorepark

FEEDING forage kale to weanlings is a good alternative to more conventional systems of rearing replacement dairy heifers providing soil conditions are suitable.

Kale has a high feeding value and is equivalent to early spring grass in terms of quality. It also has a high level of crude protein to promote growth. Here's what to do:

- Sow in the first week of June — the earlier the crop is sown, the greater the yield. Sowing after mid-June will lead to lower yields.
- Create a fine, firm, seedbed — kale seed is very small and soil needs to be well cultivated to ensure good germination. This can be achieved by discing the paddock several times.
- Seed can be drilled or broadcast; higher seeding rates are needed when broadcasting.
- Seeding rates should be 4.5kg to 5kg/ha.
- Clubroot can be a problem in paddocks continually sown with brassicas — have a minimum of a five-year gap between

brassicas in your rotation and ensure that soil pH is adequate.

- Nitrogen — for Index 2 soil, 130kg N/ha will be required. Best results are achieved when the nitrogen is applied in two applications — the first at sowing and the second at the two to three-leaf stage.

- P&K — for Index 3 soils, 30kg P/ha and 170kg K/ha will be required and should be applied at sowing.

Once sown, the crop should not be forgotten about; check regularly for insect attack. Flea beetle can attack in dry weather; you'll see this when 'pinholes' appear in the leaves at the two to three-leaf stage. When the plant is well established it is subject to attack from caterpillars (diamond back moth). They create transparent 'windows' in the leaf and, when the leaf is turned over, green caterpillars are visible. Rapid action is needed.

Before weanlings start to graze the kale during the winter you must decide the direction in which the kale will be grazed. A long narrow strip is much more desirable than a short, wide, strip. The long narrow strip improves utilisation and is easier to manage. Once the wire is moved in to the edge of the kale the animals will graze under the wire, ensuring high levels of utilisation.

Another consideration when grazing kale during the winter is mineral requirement. Before allocating animals to

the kale crop they should all be given a bolus that contains adequate levels of copper, selenium, cobalt and iodine minerals for the winter season.

Moorepark experience

For the past two winters Moorepark weanling heifers have been outwintered on kale. Heifers have been offered a 70% kale and 30% baled silage diet or a 100% kale diet. For the first week all animals should be offered a fibre source to help them to adapt to the kale diet.

Poorer quality bales of silage or straw are ideal during the first week to ensure that the animals 'develop a taste' for the kale and do not develop a preference for silage. Even if you are feeding a 100% kale diet you should feed a fibre source for the first week; if there is continuous frost (similar to last winter), animals will have to be given additional feed, such as grass silage, and kale removed from the diet.

In the Moorepark experiments there has been no difference in terms of weight gain or fertility performance between the 70% kale and 100% kale diets. However, higher levels of management are required when feeding a 100% kale diet.

Heifers outwintered on kale in Moorepark outperformed those on silage only diets indoors and have had equal performance to those indoors on a silage and 1.5kg concentrate diet.

Why do vegetable crops bolt?



Stephen Alexander
Teagasc Kinsealy

YOUR beetroot is growing nicely, you're looking forward to the harvest and then, all of a sudden, it shoots up into flower, the roots stop swelling, turn woody and your dreams are in tatters. What's going on?

Most of the vegetables we eat are biennials, e.g. brassicas, onions, leeks, beetroot, celery, carrots and parsnips. They grow vegetatively in the first year and then flower and set seed in year two. The vegetable grower is interested in the first bit and the seedsman in the second. Bolting occurs when the plant short-circuits the process by flowering in the first year and prematurely runs to seed. Why does this happen?

Biennials require a period of cold to initiate flower buds; this takes place naturally during the winter and is a process known as vernalisation. However, they are insensitive to cold in the seedling or young plant stage; this is known as the juvenile stage. The optimum temperature for vernalisation is usually within a degree or two of 4°C. At lower temperatures growth processes stop, and at higher temperatures, above about 12°C, there is no stimulus to flower.

It's interesting to note that if a warm day follows a cold night it tends to cancel out the vernalising effect of the lower temperature, but if cool days follow a succession of cold nights then a crop is set along the path to flowering. As a rough guide, it only takes about six weeks of cold weather to initiate flowering, but you won't see the effect for quite a while. A crop that bolts in early summer will have encountered a cold spell sometime during the previous spring.

So, for a crop to bolt, it has to have to be of a certain age and endure a period of cold. The cold conditions are a combination of temperature and time and can arise from a fairly low temperature for a long time or a low temperature for a short time, but it takes more than a few frosty nights to trigger the reaction.

Growers are aware that certain crops are prone to bolting and are careful not to sow too early in the year. For example, the first swede sowings do not take place



Bolting in spinach (top), leeks (above) and brussels sprouts (right).

until April. If they are sown earlier they must be covered with plastic or fleece to reduce the build-up of cold units that trigger bolting. Trials carried out at Kinsealy on transplanted swedes demonstrate this. The crop was deliberately sown at the end of January to induce bolting. The uncovered crop suffered 88% bolting while the covered crop was much less at 18%.

Variety can play a part and plant breeders do their best to develop bolt-resistant cultivars. Beetroot is a crop that can run to seed if sown before April, but if you choose a variety such as Bolthardy that's been selected for its cold tolerance, it can be sown in March. Breeders are also working hard to select out resistant strains of coriander which is also prone to bolting.

Time of sowing can influence a crop's flowering reaction. Early Brussels sprouts sown in the autumn are more prone to bolting than the same crop sown in early spring, which has less chance of clocking up the necessary cold units. The old traditional sowing date for spring cabbage was around 20 July. If sown earlier, you risk the plant being too advanced going into the winter, and with a

cold check would bolt before it had a chance to form a head. This spring, certain plantings of a new spring cabbage variety, Winter Jewel, all bolted — no doubt a consequence of the record low temperatures we experienced last December.

Certain vegetables such as radish, spinach and lettuce are annuals that are triggered into flowering by day length. Under normal circumstances, a lettuce will only bolt after hearting. It is responding to the long days of summer in doing this, and at the height of the summer there may be only a few days between the heart being formed and it beginning to throw out a flowering shoot. But if the crop suffers stress, for example, if the weather turns hot and dry and the crop is left unirrigated, then the lettuce may well go straight to the flowering stage without forming a head.

The same holds true for radish and spinach.

If you understand the reasons behind bolting, choose the correct variety and sowing date, and with a bit of lady luck on the weather front, you'll have no problems in producing the best of vegetables.

tillage

Docks still a major problem

Tim O'Donovan Teagasc Kildalton

THE broadleaved dock is considered as one of the five most widely distributed non-cultivated plant species in the world and one of the most studied by researchers. So why then are docks still a major problem and guaranteed to be a question at dairy and beef discussion groups this May and June?

The answer is a combination of good productive grassland practices and the dock growth habit. Teagasc research on docks has proven that dock seeds do not survive the silage pit (due to low pH). Also, dock seeds that are eaten by animals are affected by the rumen pH but the time span is probably not enough to stop them germinating completely.

Dock seeds that make their way into slurry directly will not be affected. This is important for spread in hay fields. Another thing to note when making silage is that dock seeds produced in May and June are poor germinators (10%). As the year goes on, the seeds produced by docks have a much higher germination capacity (85%).

So why then are silage fields still infested with docks, considering that the vast majority of silage is made in June or earlier and the typical silage pH is around four?

Numbers

As with many weeds, it is a numbers game. In typical Irish grass fields there could be 180,000 dock seeds/square metre in the top soil. Nature produces a lot of potential offspring as it knows that there is a good chance that few will sur-



vive and themselves reproduce. In fact, 90% of dock seeds never make plants due to insect feeding, death or decay.

This is just as well, as three out of four dock seeds can be buried for 10 years and germinate, given the right conditions.

Dock germination and growth

For a dock seed to germinate, the amount of light reaching the soil surface is the main factor as moisture and temperature are usually adequate. Open swards or swards after cutting facilitate this.

The main contribution of cattle slurry to dock problems in grassland is in relation to its effect on increased nutrient status of the soil which favours the establishment, competitiveness and survival of the dock seedlings.

The seedling dock needs nitrogen while, later on, they need potassium to form their large tap root system. Work at Johnstown Castle showed that in a grass sward, the level of potassium may be in oversupply for the needs of the grass, thus favouring the higher needs of the dock.

Remember also that cattle slurry contains higher levels of potassium relative to nitrogen and phosphorous. Teagasc recommends that soil potassium levels should be maintained at index 3

(101 to 150mg/l) and that you regularly soil sample to ensure you are correctly fertilizing your crops. This strategy will also reduce the competitiveness of docks in your grassland sward and facilitate effective chemical control.

MAJOR CHANGES | to dock chemicals, 2011

- Straight versions of mecoprop-p (CMPP-P) have been or are currently being re-registered.
- Their use on agricultural grassland is being removed.
- Products are being allowed the customary one year use-up at farm level.
- Farmers should use up existing stocks of straight CMPP-P products (old PCS numbers — see table) in 2011.
- Newly registered CMPP-P products will not be allowed on agricultural grassland in 2011 and future years.
- Failure to obey the product label is a breach of cross compliance rules and may incur Single Farm Payment penalties.
- Herbicides containing mixtures of CMPP-P and other actives (e.g. Foundation, Mircam, etc) continue to be allowed on agricultural grassland.

Table 1 | CMPP products for use on grassland 2011

	Product Name	PCS No	Allowed on agricultural grassland in 2011	Allowed on agricultural grassland in 2012 and future years
CMPP products not allowed on agricultural grassland in 2011	Compitox Plus	02843	No	No
New PCS numbers	Duplosan New System CMPP	02842	No	No
	Optica	02661	No	No
CMPP products allowed on agricultural grassland in 2011	Compitox Plus	90083 & 92064	Yes	No
Old PCS Numbers	Duplosan New System CMPP	91667 & 90538	Yes	No
	Optica	00405	Yes	No
	Twinprop	92091	Yes	?

Contact your adviser or merchant for more details.

Getting the best out of spring barley

A grower's perspective

Michael Hennessy Teagasc Oak Park

FOR the last 20 years, Colm Fingelton has been growing spring malting barley on his farm outside Stradbally, Co Laois. Colm farms close to 120 hectares (300 acres) of continuous malting barley.

His ground varies from light to medium, with a few areas, which he considers heavy and difficult to manage in the spring.

Average yields have dipped on the farm over the past two years but he still maintains 6.9t/ha (2.8 t/ha) over this large area.

Colm maps out all operations early in the season. This ranges from altering cultivations, to variety choice on different parts of the farm, to fertilizer selection on his different land types.

He aims to plough heavy land in mid to late December to get some weathering on the soil. "The lifting of the ploughing ban will facilitate earlier ploughing, but since the regulators have seen sense there hasn't been the weather to start ploughing early," said Colm.

"Spring barley is in the ground for approximately five months and if its feet and anchor points are not right, then it is difficult to get the best from the crop," said Colm, when referring to the seedbed he likes to achieve before planting.

"I try to approach cultivations much like walking on egg shells; I try to do as little harm as possible and try to wait until conditions are right."

Planting is completed with a three metre Vaderstad drill which can cover up to 40 hectares (100 acres) over a long day, but the machine has the advantage of only working well when conditions are right.

Conditions

Only drilling when conditions are right has enabled Colm to achieve good plant stands without compaction, year in year out, which, he says, helps to maintain a high average yield.

Barley is planted at 160kg/ha (10stone/ac) in the heavier land with the lighter land planted at 145kg/ha (9st/ac). Up to now, Colm has applied approximately 30% of nitrogen with P and K at crop pre-emergence. 10:10:20 is used on the heavier land and 16:5:20 or 15:3:20 on the lighter land which has higher levels of P. The remainder of the nitrogen is applied at the early tillering stage of the crop.

This strategy has worked well for Colm as he says the practice is necessary with the lighter land to get the crop well advanced in case of very dry conditions in May/June. However, he is considering the Boortmalt nitrogen recommendations/application timings for good protein levels this year. Proteins in Colm's barley have been lower than normal over the past couple of years but he is adamant that he has not changed his agronomy during that time so, in his opinion, weather conditions have played a big part in the low proteins story.

Varieties

Cocktail and Sebastian are the two varieties on Colm's farm this year. Sebastian is prone to rhynchosporium so Colm is aware it will need a close eye early in the season.

He adopts a cautious approach to fungicides and aims to apply the first spray at first node and the final fungicide when the awns are fully emerged. Rates will reflect the disease pressure at the time of application. Typically, the T1 will consist of a half-rate triazole with the final fungicide consisting of Bravo plus three-quarter rate triazole and a half-rate strob.



Michael Hennessy discusses spring barley plant populations with Colm Fingelton and Liam Dunne.

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A nitrates inspection need not be a nightmare



Tim Hyde
Teagasc Athenry

THIS article deals with the paperwork and the farmyard issues that are looked at during a nitrates inspection. Since the start of 2011, farmers have been commenting on the noticeable increase in the number of nitrates inspections being carried out by the DAMF (Department of Agriculture, Marine and Food).

Approximately half of these inspections are for the DAMF and half are for the local authorities. In total, there will be 3,000 nitrates inspections carried out on farms in 2011.

All types of farm are eligible for nitrates inspections. Penalties applied during a cross compliance inspection may also apply to REPS, DAS and AEOS.

What happens during inspection?

The DAMF inspector is required to do a farmyard sketch and measure all storage facilities. Where an issue that requires immediate attention (e.g. a direct discharge to water) is observed on the day of inspection by the DAMF official, the local authority environment section is notified by phone.

Following an inspection, the farmer has to forward his/her fertilizer plan, fertilizer records and records for manure storage facilities for the previous calendar year to the DAMF, Portlaoise. The inspector will provide the farmer with blank records that have to be returned. Copies of these records are also available from your local Teagasc office.

Minimisation of soiled water

The farmyard will be checked to ensure that excess dirty or soiled water is not being generated. Clean water must be diverted away from dirty areas of the farmyard towards clean water outfalls.

If clean water is allowed to become soiled, this is noted. Incorrect management of clean water will increase the storage requirement and the volume of material for land spreading. All gutters and downpipes are checked where rainwater would flow off a shed onto a dirty yard or into a storage tank. A farmer is

not required to put gutters on sheds where the water falls from the shed directly onto a field or onto a clean yard and is then diverted to a clean water outlet.

There must be 10 days storage of soiled water. Areas associated with dirty water production will be measured.

Manure and organic fertilizers

A farmyard sketch is prepared, providing details of all storage facilities used on/off the farm and measurements of yards used for feeding cattle, collecting yards, etc. All tanks, overground stores, earthen bank lagoons and geomembrane lined stores are measured if there are no health and safety risks.

All slurry, FYM, soiled water (dairy and pit washings) and silage effluent must be collected. Where silage (grass, arable silage, maize, beet tops, etc) is made, there must be a concrete base and collection channels for effluent. Run-off from collection yards on dairy farms must be collected.

All loose housing is measured, and if the FYM is allowed to build up under the stock or if stored elsewhere. Poorly managed channels and structures will also be noted.

Sheep sheds built since 1 February 2006 must have a concrete floor in line with DAFF specifications for sheep housing. All nitrates inspections will consider whether or not inadequate management of the storage facilities leads to an indirect discharge/seepage to groundwater/surface water.

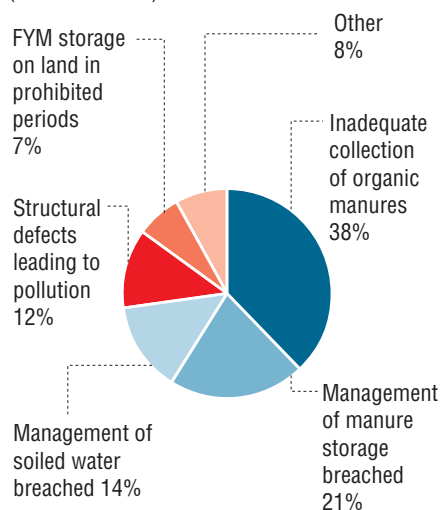
Silage effluent collections and storage will be checked to see if it is being properly diverted and if the tanks collecting the effluent are 'fit for purpose'. Checks will also be carried out on structural defects such as cracks in concrete floors, walls, channels and signs of pollution. Round bale storage will be checked, and if stored outside and within 20m of a watercourse, then there must be storage facilities for the effluent.

Structural defects in the storage

Each storage facility (slatted tanks, dungsteads, FYM stores, earthen bank lagoons, geomembrane lined lagoons, effluent tanks, silage pits) is checked for visual evidence of any structural defects which may be leading to runoff/seepage to groundwater or surface water. Farmers must be careful not to use an earth-

Nitrates penalties in 2009

(Source: DAMF)



ABOVE RIGHT: All outwintering pads, lagoons and reedbeds must have planning permission and must be certified as 'fit for purpose' if they continue to be used for storage of organic manures/soiled water.

BELOW: Minimise soiled yard areas and check all guttering. See shed on left hand side with no guttering.



enbanked lagoon/earth lined outwintering pad or a reedbed that does not have planning permission or is not certified by an engineer/built to specification.

Upon inspection of these unlined structures, a sanction of 20% is being imposed by the DAMF, irrespective of the volume or type of material being stored in them. The 20% penalty applies to all unlined structures irrespective as to when they were built, unless they were built with DAMF grant approval in recent times. The structures must be fit for purpose and where these features are leading to significant pollution, a higher sanction of up to 100% may be applied.



FYM storage on farms

FYM cannot be stored on hardcore, gravel, farm roadways or any structure where the seepage/effluent cannot be collected.

- FYM cannot be stored in fields after 30 October, but can start to be field stored after 12, 15 and 31 January in zones A, B, C, respectively.
 - FYM cannot be field stored within:
 - 250m of a spring/well for human abstraction by greater than 50 persons.
 - 50m of any other spring, well or borehole.
 - 20m of any lake shoreline.
 - 50m of exposed cavernous or karst limestone feature.
 - 10m of any stream/river.
- Check with your local Teagasc adviser for further details.**



FARMER FOCUS — MICHAEL KELLY

Lined structures (lagoons and out-wintering pads) without planning permission are acceptable if there is a tank collecting run-off, etc.

These structures are cross reported to the local authorities in relation to planning permission. If the local authority subsequently says that the facility is not acceptable, a sanction will be considered, based on the local authority's recommendations. These structures will have to be discontinued and filled in if these requirements are unavailable. The 20% sanctions will be reviewed if DAMF receives written confirmation from the local authority that the facility is fit for purpose.

ABOVE: Dairy farmer Michael Kelly, Ballinasloe, Co Galway reflects on his recent nitrates inspection. Examples in this article are not from his farm.

"I was always aware of these inspections but when it came to my turn to get an inspection I did not know what to expect," said Michael.

"I have not been in REPS for a few years and I had a fertilizer plan for my farm which gave me a shopping list for fertilizer each year."

Michael observed that when farmers walk through the farmyard every day they can become oblivious to issues that should be dealt with (guttering, FYM

storage, dirty yards). "I found that after the inspection, I was more aware of soiled/clean water, rainfall on clean roofs and yards, keeping clean yards/front of silage bases cleaned as frequently possible," he said. "Scraping clean yards of any muck, silage or FYM that may fall onto these areas during normal farming activities is essential and the concrete surfaces on silage slabs and dirty yards should be looked at yearly to ensure that there is no seepage. We clean them off and use bitumen to fill cracks."

"It was a great help that my Teagasc adviser, Bernadette Leahy, helped me to complete the necessary paperwork following the inspection."

Nutrient management

Mark Treacy Teagasc

THE Agricultural Catchments Programme (ACP) has been working closely with farmers in Timoleague, Co Cork, to evaluate the effect of the good agricultural practice regulations on both water quality and farm productivity.

The ACP consists of six individual catchments, representing areas of different soil type and land use (*see map*). The Timoleague catchment represents highly stocked grassland areas on free draining soil where dairying is the dominant enterprise. Stocking rates on the catchment dairy farms are high with an average of 201kg/ha of organic N/ha in 2010 (ranging from 160 to 250kg/ha).

Local farmer Kevin Collins has been a strong supporter of the ACP since its inception, providing farm management information and hosting monitoring equipment on his land. Kevin runs a highly stocked 60ha dairy unit. In 2010, the farm was stocked at 244kg/ha of organic N, carrying 140 dairy cows plus followers, totalling around 210 animals. The business includes an interesting enterprise — a honey business involving production and marketing of honey from over 300 beehives.

“As part of the programme we have gained a really detailed picture of the nutrient status of our land,” said Kevin. “This has allowed us to improve our use of nutrients to maximise production and make substantial savings by omitting applications, of phosphorus, for example, where soil samples showed that nutrient levels were high.”

Kevin follows a nutrient management plan as a participant in REPS. The plan details his planned stock numbers, soil nutrient status and artificial fertilizer use, as well as organic fertilizer production, storage and usage. The plan also satisfies the requirements of the nitrates derogation which Kevin requires as his farm is stocked at greater than 170kg organic N/ha.

Kevin said that one of the biggest benefits he has gained from his involvement with the ACP is his increased awareness of the value of cattle slurry. He aims to maximise the value of cattle

“ The ACP has allowed Kevin Collins to improve his use of nutrients to maximise production and make substantial savings



slurry by applying a large proportion of it during the spring. Last January, much of the farm received an application of 2,200 gallons of slurry per acre, allowing the first nitrogen application to be skipped on the majority of the farm, with only a few of the last paddocks to be grazed receiving urea before grazing.

Another 2,200 gallons of slurry per acre was applied to paddocks as soon as cows had finished grazing them, allowing him to reduce his nitrogen application on these paddocks by half. This was made possible by an aeration agitation system installed in his slurry tower under the Farm Waste Management Scheme.

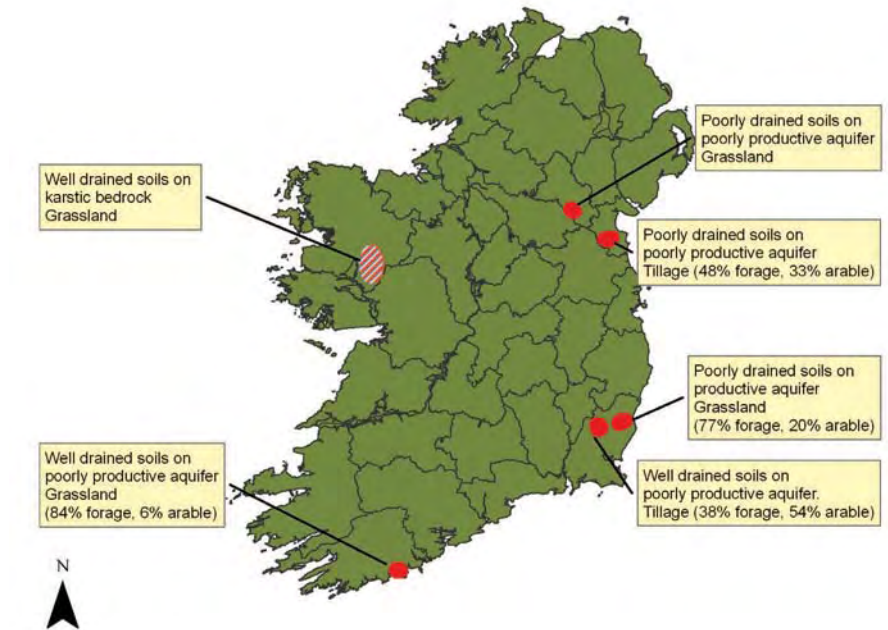
“This is one of the best investments I

have made,” said Kevin. “I usually allow the system to run for one hour per day, which keeps the tower fully agitated and ensures that there is always slurry ready to apply.”

Applying slurry to the grazing area enables Kevin to recycle the slurry nutrients to most of the farm area. This is useful for maintaining a balance in nutrient levels across the farm, as Kevin is not permitted to apply any chemical P fertilizers under his REPS nutrient management plan.

For silage production, an application of 3,500 gallons/acre was applied in early April. This provided the P and K requirements of the silage crop, with 95

is a sweet success



MAIN PICTURE: Kevin Collins (left) chatting with ACP adviser Mark Treacey at the catchment outlet on his farm.

ABOVE: The aeration agitation system in action in the overground slurry store.

TOP: ACP catchments across the country.

units of urea also applied. For the rest of this summer Kevin plans to apply 20 units of CAN per acre after each grazing. This will be reviewed regularly, depending on grass covers, and altered accordingly. "We'll also try, where conditions allow, to substitute CAN with slurry on grazing paddocks. We get a good response to slurry in the summer, provided it is applied in damp conditions."

In total, Kevin applied 199 units of N per acre in 2010, down from 215 units per acre in 2009, and is hopeful that he can further reduce his N this year. Certainly, Kevin appears to be making significant financial savings from his careful nutrient management, with his Teagasc Profit

Monitor showing a cost of 1.23c/litre on fertilizer — well below the Teagasc target figure of 1.80c/litre.

While Kevin's farm is highly stocked, he still sees a place for white clover in his system. "We noticed the positive effects that the clover was having both on sward quality and our fertilizer bill when we reseeded part of a less intensively stocked block of ground away from the milking parlour, he said.

"We recently oversowed white clover into another 10ha of the farm as part of our REPS plan," said Kevin.

"We have to be careful not to poach the clover swards in spring as they tend to be more open.

"However, the clover swards tend to hold their quality for longer, allowing more flexibility in the timing of grazing," he added.

For the first half of the year, the grass-clover swards get similar treatment to the rest of the grassland, as the clover is dormant. However, for the summer months, Kevin has found considerable scope to reduce nitrogen application to the grass-clover swards. These swards will receive little or no N this summer, and will only receive a couple of light applications of slurry if conditions are suitable. "An added bonus is that clover flowers are a great source of nectar for our honey bees," concludes Kevin.

forestry

Clash of the ash yields cash

Demand for top quality hurleys is stronger than ever, according to this Tipperary farmer and sawmill owner



Michael Somers
Teagasc Nenagh

AS the sun rises over Slievenamon, Jim Dunne begins his day deep in the heart of Tipperary hurling country. Herding his suckler herd on the 125-acre farm is the first job but it's not long until he enters his sawmill.

Jim has been sawmilling most of his life. At first he worked for others then, in 1994, he set up his own business. Today, Jim's sawmill is one of the key links in the chain which sees ash trees transformed into top quality hurleys.

"We started off processing fencing material stakes, strainers, post and rail," said Jim. As timber processing became more automated in the larger sawmills, he diversified into processing and making more specialised products. Today, he processes 70,000 hurley butts, which are sold to hurley makers all over the country; manufactures timber gates; makes cheese boxes and even constructs bee hives.

Hurley butt

Jim started planking hurley butts in 1996. This involves expertly slicing the butt to make best use of the curved grain



Hurley ash is the most expensive timber in the world



at the base of the tree. His wife, Breda, and son, Colm, are active in the business, which also employs several staff.

Jim has planked ash butts from all over Europe and believes that Irish ash is best. "It grows quicker here so there is a bigger grain. The hurley makers love this because it's easier to work."

A hurley butt is 1.3m long and at least 25cm in diameter. "The best planks come from butts that have a diameter of between 28cm and 34 cm," said Jim.

Expert cutting is vital. "Many farmers don't know how to cut butts properly and lose a lot of senior planks by poor cutting," says Jim. A senior plank retails at between €7.50 and €9. If poorly felled, this figure will, at best, be halved.

Senior planks have the potential to yield a 36-inch hurley. Juvenile planks, used for hurleys for young players, range from 28 to 34 inches in length. A butt can

yield approximately 170 planks/m³, but this varies with the diameter of the butt.

Jim maintains that there is a lot of ash in Ireland that could potentially be used for hurleys. Ash on ditches, small groves and wood lots can be used.

Hurley ash is the most expensive timber in the world. It can fetch €400 to €500 per cubic metre, and that's when still in the field. By the time the butt is delivered to Jim it can easily cost double that.

However, this figure is dictated by quality — good buttressing, clean, knot-free timber and proper cutting. "The GAA want quality; the hurley makers who hone the boards into ready-to-use hurleys want quality, and I want quality," is Jim's message.

Jim is also interested in how ash is grown. Recently he attended a field trip with the Irish Guild of Ash Hurley Makers' to the Agri-Food and Biosciences



FAR LEFT: Jim Dunne surrounded by ash butts. These are expertly processed, taking into account size and the natural wood grain, into planks. The planks are sold on to specialist hurley makers.

ABOVE: The end product. Each of these boards will ultimately yield a senior or juvenile hurley.

Pictures: Mark Moore

Institute, Northern Ireland, Research Centre in Loughall, Co Armagh. This visit looked at systems where ash was grown at 6m spacing and undergrazed with sheep. The system has the potential to yield very high quality butts, because of the wide tree spacings.

“It’s a great way to grow ash, but tree protection is very important,” said Jim. “It would be great if the Department of Agriculture would encourage farmers down here to look at this.”

New source

“There are some ash trees from the Department’s afforestation scheme coming on the market,” said Jim. “It’s small now, but we can get some juvenile planks from the thinnings. No doubt, as we move into second thinnings, planks will get bigger and better.” But Jim stresses the importance of ‘formative

shaping’ of trees. “Even though ash is self-pruning, to get the best quality, farmers should continue removing small branches below 1.3m. It’s amazing how many boards can be devalued because of small little branches appearing in the plank.”

Jim is not afraid to process small trees (18cm to 20cm diameter). However, the plank yield per cubic metre is not as high. This material is very young, with a lot of moisture. Air-drying this material for at least 12 months is vital. If this is done it will eliminate board cupping. Once cupped the board is useless.

Gates and fencing

Gates were one of the first products Jim made and he is still making them. During the boom there was a great demand for gates. “I only make gates from European larch. It is the most durable timber for

Irish weather conditions. All of the larch I use is sourced in Ireland.”

Gates can be made to order and can be made fully automated with remote control devices. Most of the material that Jim uses for gates comes from thinnings.

Bee hives.

Recently, Jim has started to make bee hives. “We were approached by beekeepers to make hives and there is a growing demand for them. Hives require precision work and are made from untreated Sitka spruce wood sourced in Ireland.

Dunne’s sawmill is a good example of the benefits of forestry — local industry, creating long-term, sustainable jobs. “A key lesson for us is that you have to be very flexible and constantly open to new challenges and niche markets,” he concluded.

Botanic Gardens

Growing media — making the right choice



An occasional series by experts at the Teagasc college at the National Botanic gardens aimed at adding to the appearance and value of your farm

Harold Lawlor Teagasc Botanic Gardens

THE term 'growing medium' or 'substrate' describes the material used in a container to grow plants. Some people still use the term 'compost' in the same context though, technically, a compost is the product of a composting process. The ingredients of a growing medium can be mineral (e.g. soil, rockwool or perlite) or organic (peat, bark, wood waste or green waste).

Whatever the mix, a growing media should be:

- Able to hold water
- Sufficiently porous for rapid drainage
- Low bulk density (light weight)
- Well aerated for root growth
- Sufficiently stable to support the plant
- Able to retain nutrients
- Free of weed seeds, pests and diseases
- Consistent from bag to bag
- A pH that suits your plants.

Few materials satisfy all the above criteria, but peat-based growing media come close and have been tried and trusted for decades.

Until comparatively recently, the choice was limited to soil and peat. Today, the amateur or professional grower has a huge choice of growing media. To choose well you need to understand the physical and chemical properties of each growing medium and how these characteristics match the plant's requirements.

The physical properties relate to the volume of air spaces, its ability to hold moisture and its weight or bulk density. It is distinctly possible to achieve different growth responses from the same growing medium by varying the percentages of these physical characteristics.

Increasing or decreasing the particle size of the raw material will have a profound effect on how it drains or holds water. Failure to understand this concept fully results in serious issues with watering of plants in containers.

Understanding the chemical aspects of the growing medium is also essential if



There is a wide range of growth media available, each designed for a particular application.



ABOVE and RIGHT: Two plant growth media produced from green waste materials.

you want to produce the best quality plants. Water soluble fertilizers can be added to growing media and will become available once water is added — just like sugar dissolving in a cup of tea. This may be desirable for immediate growth or may be excessive for young plants, the roots of which can be scorched by high nutrient levels. Controlled release fertilizers can be a safer option, provided they are incorporated at the correct rate.

Growing media suitable for seed sowing must be very fine, in order to hold moisture, and should have a low nutrient content. Emerging seedlings only thrive in growing media with low levels of dissolved nutrients. This is easy to achieve with peat as it contains hardly any soluble nutrients in its raw state.

If plants are intended to remain in containers for longer periods, a more open growing medium with higher nutrient levels is required. Whatever growing medium is used, it will eventually be depleted of nutrients, and liquid feeds will be the order of the day.

Over-reliance on peat-based growing media is causing concern among the

general public, however, and suppliers are increasingly exploring different options that could replace peat in growing media.

Early users of peat-free products found that they performed poorly and will need reassurance if they are to switch. The levels of nutrients in materials used to make peat-free growing media are usually higher and can be a lot more unpredictable.

Bark varies according to the age and species of the tree it comes from and the soil type on which it is grown. Similarly, composted wastes vary according to the materials composted. It is invariably too alkaline (excess lime) and has soluble nutrient levels which are too high and unbalanced unless tweaked and diluted with something less nutrient rich like peat or bark.

The next time you intend to purchase a bag of growing medium, please carefully read the information on the bag. If it's unclear, ask the trained staff for assistance. You can't get the best out of a growing medium if you don't understand what makes it tick.

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1. Against *Ostertagia* spp. and *Dictyocaulus* spp.

2. CYDECTIN market support trials, B1-B59.

3. Strong, L. Overview: the impact of avermectins on pasture ecology. *Veterinary Parasitology*. 48 (1993) 3-17 Floate, KD, Endectocide use in cattle and fecal residues. *The Canadian Journal of Veterinary Research*, 2006; 70:1-10.

4. Effects of ivermectin and moxidectin on the insects of cattle dung. L. Strong & R. Wall, School of Biological Science, University of Bristol, UK.

5. Compared to ivermectins.



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