

TEAGASC Today's farm

MARCH-APRIL 2012 VOLUME 23 NUMBER 2

Advice on business, production, environment, and countryside issues



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
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Cover caption | Fungi are often the farmer's enemy, causing disease and loss in growing or stored crops. John O'Connell has harnessed fungi on his forest thinnings and tree stumps near Limerick. Farming the fungi produces valuable gourmet mushrooms and an intriguing example of lateral thinking. PICTURE: John O'Connell

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

Editor: Mark Moore | Editorial team: Alison Maloney, Joanne Carroll, Eric Donald
Chief sub-editor: Leslie Horgan | Sub-editors: Regina Horan, Garrett Allen, Rosie McCormack

Cover design: Design at DBA | Imaging: Owen McGauley, Sean O'Flaherty
Printing: Boylan Print Group, Drogheda, Co Louth | Advertising: Frank McGouran
All Media Matters (01) 4941071 086-8111567 sales@allmediamatters.com

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

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COMMENT

Forestry — lateral thinking



Mark Moore
Editor,
Today's Farm

Any farmer who sees a well managed forest come to maturity and the wealth it represents inevitably regrets that he – or his father, or his grandfather – didn't plant even more. Almost every farm has a few acres, which would be ideal for planting and would result in minimal loss in production. As volatility in food commodities increases, some forestry, itself cyclical, would act as a counterbalance.

John O'Connell in Limerick (see the Michael Sommers article on page 36) has taken lateral thinking even further and is growing high value mushrooms on forestry thinnings and living tree stumps. A little imagination and the courage to do what has not been done before can work wonders.

Foraioseacht – smaointeoireacht chliathánach

Is iondúil go mbíonn aiféala ar aon fheirmeoir a fheiceann foraois deariartha ag teacht chun aibíochta nár chuir sé féin – nó a athair, nó a sheanathair – níos mó crainn. Tá roinnt acraí ag nach mór gach feirm a bheadh foirfe le haghaidh plan-daithe agus a mbeadh cailiteanas táirgeachta íosta de thoradh air.

Dé réir mar a mhéadaíonn an luaineacht i dtráchtearraí bia bheadh roinnt foraoiseachta, atá timthriallach ann féin, ina hábhar frithchothromaíochta.

Tá an smaointeoireacht chliathánach tógtha níos faide fós ag John O'Connell i Luimneach (féach airteagal Michael Sommers ar leathanach 36) agus muisiriúin ardluacha á fhás aige ar thanúcháin fhoraoiseachta agus stumpaí crann beo. Is mór an díol iontais a thagann ó roinnt bheag samhlaíochta agus an misneach tabhairt faoin rud nach ndearnadh cheana.

upcoming events

TALKING TIMBER

Opportunities for forest owners to meet foresters, harvesting contractors and timber buyers

Teagasc's Forestry Development Department will run four regional timber marketing days during March. This is a great opportunity to get to know foresters, harvesting contractors and timber buyers and ask questions such as:

- How do I get into contact with potential buyers?
- Is my forest ready for thinning?
- How do I secure the best price for my timber, while optimising my forestry investment into the future? Each day will run from 9:30am to 1:30pm on the following dates and locations:
- North East region, 8 March: Bailie Hotel, Main St, Bailieborough, Co Cavan.
- Midlands region, 13 March: Abbeyleix Manor Hotel, Abbeyleix, Co Laois.
- West region, 15 March: Lough Rea Hotel, Loughrea, Co Galway
- South region, 21 March: Castle Hotel, Macroom, Co Cork.



Teagasc's Forestry Department will run four regional timber marketing days during March.

- 11.25am: Donagh Berry and Frank Buckley (Teagasc, Moorepark), breeding for fertility in Irish dairy cows (15 + 5).

Session 2

- Nutrition and health, chair: TBC.
- 11.45am: Stephen Butler and Frank Buckley (Teagasc, Moorepark); nutritional management for fertility (20 + 10).
- 12.15pm: David Graham (Animal Health Ireland) & Riona Sayers (Teagasc, Moorepark); infectious disease status and links to fertility (20 + 10).
- 12.45pm: Lunch

Session 3

- Reproductive management; chair: John Mee, Teagasc Moorepark.
- 2pm: Jock MacMillan (University of Melbourne); breeding programme for compact calving (30 + 10).
- 2.40pm: Scott McDougall (Animal Health Centre, New Zealand); New Zealand experience achieving compact calving and strategies for dealing with anoestrus, endometritic and late-calving cows (40 + 10).
- Forum: Farm focus (10 min each + 30 min discussion facilitated by J Donworth and Jock Macmillan and Scott MacDougall included in panel discussion)
 - The 5 most important factors affecting fertility in my herd
 - 3.30pm: Pat Ryan
 - 3.40pm: Robert Troy
 - 3.50pm: Barry Bateman
 - 4.30pm: Close of conference

PROGRAMME: DAY TWO

5.5 CPD points

- 9am: Registration/refreshments, Scott McDougall (Animal Health Centre, New Zealand).
- 9.15am: Identifying reasons for

poor fertility in a problem herd (a case study) (15+10); Jock MacMillan (University of Melbourne). Breeding Programme for compact calving (45 + 15).

➤ 10.10am: Audience interaction related to the following topics:

- Pre-breeding heat detection
- Pre-breeding scanning
- Synchronisation for heifers
- Synchronisation for cows
- Repeat breeder cows

— Scott McDougall (Animal Health Centre, New Zealand). Problem cows: management strategies for prevention and appropriate use of therapies (45 + 15).

➤ 11.10am: Audience interaction related to the following topics: RFM; cysts; metritis; endometritis and anoestrous cows.

➤ 12.10pm: Stephen Butler (Teagasc, Moorepark); use of controlled breeding programmes in seasonal calving systems (15 + 10).

➤ 12.35pm: Donagh Berry (Teagasc, Moorepark); examining herd genetic merit for fertility and relationships with herd reproductive performance (15 + 10).

➤ 1pm: Lunch

➤ 2pm: Farm stands on Moorepark farm (broken into three groups)

• **Frank Buckley (Teagasc, Moorepark):** Body condition score in dairy cows: demonstration of BCS, targets for different times of the year and links with fertility.

• **Eva Lewis (Teagasc, Moorepark) and Siobhan Kavanagh (Teagasc, Kildalton):** Dairy cow nutrition — pre-calving, post-calving, before and during the breeding season.

• **M. O'Donovan (Teagasc, Moorepark):** Grassland management for dairy cows: principles, allowances, grass quality, ideal pre and post grazing covers.

➤ 4pm: End of workshop.

DAIRY FERTILITY CONFERENCE

➤ Wednesday, 11 April 2012: Rochestown Park Hotel.

➤ Thursday, 12 April 2012, Teagasc, Moorepark Conference Centre, Cork

Day one of this conference will take place in the Rochestown Park Hotel, where presentations from a range of speakers will be given. On day two, the conference will move to Teagasc, Moorepark. See *Table 1* for programme details.

PROGRAMME: DAY ONE

➤ 9am: Registration/refreshments, chaired by Jack Kennedy, dairy editor, *Irish Farmers Journal*.

➤ 9.45am: Conference opening by Gerry Boyle, Teagasc director, Oak Park.

➤ 9.50am: Stephen Butler (Teagasc, Moorepark), Irish situation and outlook (10).

➤ 10am: Jock MacMillan (University of Melbourne) and Scott McDougall (Animal Health Centre, New Zealand); InCalf in Australia and New Zealand: what is it, and what has been the impact so far? (35 + 10).

Session 1

- Cow genetics for pasture-based systems; chair: Brian Wickham, ICBF.
- 10.45am: Torstein Steine (Norwegian University of Life Science); evidence of improved fertility arising from genetic selection: weightings and timescale required (30 + 10).

ORGANIC COURSES

FETAC Level 5 – introduction to organic production courses

➤ 27 March: Castlerea and Tullamore.

➤ 24 April: Athenry and F.

On completion of the course, participants will be proficient in:

- Interpretation of organic standards.
- Principles of organic production.
- Assessing economic viability and market opportunities.

These courses qualify applicants to the Organic Farming Scheme 2012. All run from 10am to 5pm, for four days, over two consecutive weeks.

➤ Course fee: €220

➤ Pre-booking is essential.

➤ For bookings and information, contact: Helen McNulty, Teagasc, Athenry 091 845217.

TEAGASC DAIRY MANUAL

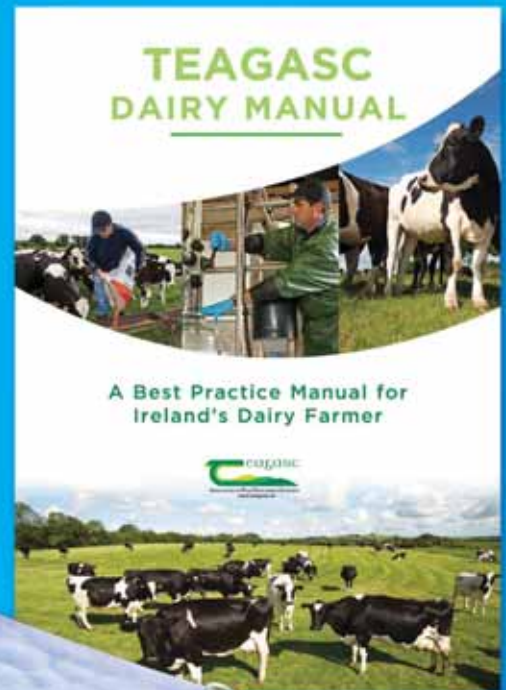
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- Why dairy farming?
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- Milk quality
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- Dairy breeding
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These sections are further divided into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

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

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



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

College open days

— *your chance to get the full picture*



Paddy Browne
Head of
education,
Teagasc
Knowledge
Transfer
Directorate

Agriculture and agricultural education are certainly back in fashion at the moment. Agriculture is performing very well and is being touted by many commentators as our best chance for economic recovery. The big news, of course, is the ongoing and very significant increase in applications for places in Teagasc agricultural colleges and, indeed, courses at local Teagasc Centres. Enrolments to Teagasc Colleges have doubled over the last five years, with 1,322 first year enrolments in 2011/2012.

As well as looking up www.teagasc.ie or the Teagasc course prospectus, you should attend some of the upcoming college open days to be held from 13th to 23 March (see panel). Visits are often arranged by schools or, alternatively, you and your parents might like to attend.

At these events, you can see first-hand the college facilities and get information on the courses on offer and the career prospects associated with each course. Our colleges are unique in that all the main agricultural and horticultural enterprises are carried out to top commercial standards based on the latest technology from Teagasc's research centres.

Who will you meet?

At the open days, you will get a chance to talk to the teachers, technicians and other staff at the colleges. You will also get a chance to meet students attending the colleges and you will get to hear the views of potential employers of course graduates.

What will you see?

There will be guided tours of the college teaching and recreational facilities and visits to the colleges' modern farming and horticultural enterprises. The following are some examples of what you will get a chance to see as part of these guided tours.

➤ The world famous Palm House at the College of Amenity Horticulture, Botanic Gardens.



At the open days, you will get a chance to meet students attending the colleges.

- State-of-the-art milking facilities at Clonakilty and Pallaskenry Colleges.
- Sustainable energy production at Gurteen Agricultural College.
- Leading edge dairy production research, in conjunction with Moorepark at Ballyhaise Agricultural College.
- Campus atmosphere in the new state-of-the-art student block at Kildalton College.
- Highly renowned community spirit at Mountbellew Agricultural College.

These are just a few examples of the facilities/programmes/student services available but all our colleges now boast modern teaching facilities and state-of-the-art agricultural, horticultural, equine and forestry enterprises.

Residential accommodation is available at four of our colleges and you will get a chance to see these facilities before deciding whether to live in or commute. While the decision will usually be based on proximity to the college, there is an increasing trend towards commuting. This is disappointing in some ways because the complete college experience is best achieved by living away from home in a new environment.

What will you hear?

There are a wide range of courses across the colleges. The Advanced Certificate in Agriculture is the standard course for future farmers, but there also courses in horticulture,

forestry, equine, agribusiness and agricultural mechanisation. While the majority of courses are further level courses accredited by FETAC, all seven colleges are involved in joint higher level courses with partner Institutes of Technology or Universities. Through these linkages, it is very feasible to progress from further level courses to higher level courses and to progress right up the qualifications ladder to the top.

You will also hear about the wide range of career opportunities in agriculture and horticulture.

For the majority of our graduates, a return to the family farm will be the most usual career path and this particular career looks very promising at the moment. There are, however, exciting career opportunities in farm management, agri business and the thriving horticulture and forestry areas.

What should you do next?

As well as attending one of the college open days, get your hands on a copy of the Teagasc course prospectus to see more detail on each course or visit www.teagasc.ie. Your career guidance counsellor will also give you invaluable advice. Surveys have shown that many of our students make their choice after discussion with friends and neighbours who are going through or have gone through the system, so 'phone a friend' before making your decision.

Schedule of

College Open Days 2012

7 College Open Days | Tuesday, 13th March – Friday, 23rd March



Get the full story on further and higher level courses
in agriculture and horticulture...

Tuesday 13th March 2012	Open Day 11.00 am – 2.00 pm (Tours On-going)	Clonakilty Agricultural College Teagasc, Agricultural College, Darrara, Clonakilty, Co Cork Principal: John Kelly Phone: 023 8832500 Email: Clonakilty.college@teagasc.ie
Tuesday 20th March 2012	Open Day 10.00 am – 3.00 pm (Tours On-going)	Mountbellew Agricultural College Mountbellew, Co Galway Principal: Tom Burke Phone: 090 9679205 Email: tvburke@iol.ie
Tuesday 20th March 2012	Open Day 10.00 am – 2.00 pm (Tours On-going)	Pallaskenry Agricultural College Salesian Agricultural College, Pallaskenry, Co Limerick Principal: John McCarthy Phone: 061 393100 Email: info@pallaskenry.com
Wednesday 21st March 2012	Open Day 10.30 am – 2.00 pm (Tours On-going)	Gurteen Agricultural College Gurteen Agricultural College, Ballingarry, Roscrea, Co Tipperary Principal: Mike Pearson Phone: 067 21282 Email: principal@gurteencollege.ie
Wednesday 21st March 2012	Open Day 2.00 pm – 5.00 pm (Tours On-going)	College of Amenity Horticulture, National Botanic Gardens Teagasc, College of Horticulture, National Botanic Gardens, Glasnevin, Dublin 9 Principal: John Mulhern Phone: 01 8040201 Email: botanic.college@teagasc.ie
Thursday 22nd March 2012	Open Day 10.00 am – 3.00 pm (Tours On-going)	Ballyhaise Agricultural College Teagasc, Agricultural College, Ballyhaise, Co Cavan Principal: Felix McCabe Phone: 049 4338108 Email: Ballyhaise.college@teagasc.ie
Friday 23rd March 2012	Open Day 10.00 am – 1.00 pm (Tours start at 10 am & 11 am)	Kildalton Agricultural & Horticultural College Teagasc, Kildalton Agricultural and Horticultural College, Piltown, Co Kilkenny Principal: Frank Murphy Phone: 051 644400 Email: reception@kildaltoncollege.ie

For further information, please contact the college of your choice at the numbers/emails above or visit our website at www.teagasc.ie

Managing change

Early retirements and a ban on recruitment mean that Teagasc is seeing staff numbers decline. What does this mean for farmers who may be gearing up for expansion? Today's Farm spoke with Dr Tom Kelly, (pictured right) Head of Knowledge Transfer



Q1 With more clients to support, advisers are increasingly office-bound, this must mean they will become out of touch?

There is no doubt that advisers will have more clients to support. However, the commitment to the delivery of increased numbers of discussion groups and public events will ensure that advisers will continue to be challenged by, and engaged with, the technical demands of their clients.

The Dairy Efficiency Programme and the Business Technology Adoption Programme, both require farmers to complete a Profit Monitor. We already know that there is a huge gap between the performance of the top 25% of farmers and the bottom 25% - where they have the same resources of land/stock, etc.

The Profit Monitor is a well proven tool which will give, both the farmer and the adviser, concrete data about farm performance, and as a team they will be able to set about improving profitability.

Q2 At a time when the service may be declining why is Teagasc increasing charges?

Ultimately, Teagasc needs to maintain a critical level of cost recovery which reflects the value of the service delivered by advisers to their clients. The charges have not increased since 2009, so an overall 5% increase in charges in 2012 is overdue.

Teagasc provides excellent value for money and is a very accessible service through a very low entry rate charge of €155 per client for a club service, with a discount of €55 for small farmer clients with less than 50 income units.

I believe clients will continue to recoup their investment in Teagasc charges several times over.

Q3 Teagasc conducts research, provides

advice, and delivers education. What activities does Teagasc see as most important?

Education of young entrant farmers and on-going education within the sector is clearly the most important service, together with providing business and technology advice.

However, as an organisation, the major strength in Teagasc is that it combines all three functions across a broad range of agriculture, horticulture, forestry and food activities.

Q4 With offices closing, is Teagasc making a strategic withdrawal from parts of the country?

Teagasc has closed 35 offices to date, with a further five offices planned for closure this year. The decision to reduce offices was based on significant cost savings in terms of office operations and the reductions in numbers of staff arising from the Government moratorium.

To date, 11 advisory clinics have been set up to facilitate areas most affected by the closure of offices. Teagasc is determined to utilise the use of technologies to ensure that advisers keep in contact with their clients and that the operation of clinics through an appointment system works smoothly for clients.

Q5 What does Teagasc have to say to clients who may be 30 or even 40 miles from an office?

Teagasc will endeavour to provide a range of suitable public activities, farm walks, seminars, etc. within a 20 mile radius of the farm. For clients who want individual consultations with the adviser, the clinic system above represents an alternative which is working well.

Where individual farmers or groups of farmers want to meet advisers, arrangements can be made to meet farmers at locations other than the

office, and of course Teagasc will still provide farm visits to clients.

Q6 The number of Teagasc advisers, researchers and college teachers is at best static and in many situations falling. What is Teagasc doing to overcome this?

Teagasc is being forced to reduce its staff numbers in line with a reduction of 30,000 in the general public service. While the general reduction across the public service is about 12%, Teagasc have to deal with a 37% reduction in staff numbers.

This is extremely challenging and Teagasc have responded by ensuring that education, and business and technology programmes are prioritised above other work. When teachers, and business and technology advisers retire, they are replaced in almost all cases by younger advisers who, up to now, were delivering a REPS service. This will lead to sub contracting some REPS work to private consultants, while Teagasc will ensure that the service delivered is of the required standard. Teagasc will seek to get approval to fill critical posts as staff retire, in addition Teagasc will seek the support of industry for funded posts where these are not dependent on government funding. The existing Joint Industry Programmes are very effective.



Q7 As advisers retire and are not replaced how is Teagasc going to remain effective?

The roles and methods of adviser operation will continue to change, with more emphasis on group support through short courses, discussion groups, public events, newsletters and other media-based support systems. Technologies such as the internet, texting and Social Media texting (such as Twitter) are increasing the productivity of advisers.

These communication tools will enable advisers to give a better service to larger numbers of clients in a structured way. At the same time, Teagasc is investing in the skills required for future advisers through an initiative with UCD, which encourages advisers to participate in an M.Agr.Sc which will further expand their skills base.

Q8 Will Teagasc stop doing certain types of work?

Teagasc has made strategic decisions in the past not to do work such as farm taxation, litigation and CPO on behalf of farmers. These services are now widely available from the private sector. Teagasc is committed to carrying out a number of programmes and schemes on behalf of the Department of Agriculture, Food and the Marine. We will continue to do this work, as much as possible, for our clients.

We may need to contract out some of this work for private delivery. We are currently identifying areas of work, such as REPS reviews, which can, as separate pieces of work, be carried out by third parties without the client leaving Teagasc.

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drystock

BTAP -promoting the use of new technology



Gary Fisher
Business & Technology Beef Adviser Donegal

A new initiative to encourage cattle farmers to adopt new technologies, to improve their beef businesses, was launched by Simon Coveney TD, Minister for Agriculture, Food and the Marine, at a Teagasc Profitable Suckling Event in Kilkenny (see picture right).

The minister sees this new initiative as a key element in driving the ambitious targets for the Beef Sector in Food Harvest 2020. The Minister has allocated €5 million exchequer funding for 2012, and subject to funding, his intention was to run the programme over three years.

BTAP is based on a discussion group model, the programme is intended to provide participants with the knowledge and the skills necessary to reduce costs and increase profit margins on their farms.

Typically 15 to 20 farmers will meet on each other's farms on a regular basis to exchange views and hear about new ideas and farming technologies. The group is generally facilitated by a Teagasc adviser.

What are the benefits of a group?

Members

- 1. Share ideas, experiences and knowledge.
- 2. Assist with the decision making process through joint problem solving.
- 3. Provide motivation and constructive criticism in a spirit of friendly interchange.
- 4. Receive technical information, latest research results and new ideas.
- 5. Lift farm profit by allowing farmers to compare their situation with other farmers as seen in the BETTER farm programme.
- 6. Build new friendships and experience personal development - farmers getting more confident in their own ability.

The BTAP will focus primarily on five key areas:

- 1. Financial management.
- 2. Grassland management.
- 3. Herd health.
- 4. Animal breeding / welfare.
- 5. Market requirements.

SO WHAT DO YOU HAVE TO DO ONCE YOU HAVE JOINED BTAP? (The entry date of March 7th may be passed before you receive this magazine).

- In 2012 participants will be required to attend at least five discussion group meetings or four meetings plus one national event. Thereafter participants will have to attend at least six group meetings or five group meetings and one national event.
- Undertake to host a discussion group meeting on their farm (only farmers in your group are invited to the group meeting).
- In order to optimise the benefits to applicants, participants will be required to complete a three-year plan to set clear goals for their farm in consultation with their adviser.
- An annual payment will be made on the basis of attending the required group meetings and national events per year and completing two tasks from the menu below.



TASK 1

Complete a Teagasc Profit Monitor (or equivalent) for

the previous production year on the participant's own farm. As verified by the facilitator. Task 1 is mandatory and must be selected and completed either in Year 1 or in Year 2 of the Programme.



Task 2

Provide on farm certified weights to ICBF as specified below.

Options for recording weights would include:

- 1. Farmer records weights using a scales owned by the farmer (or group of farmers).



- 2. Farmer records weights using a scales provided by ICBF or an ICBF approved service provider (i.e. where the scales are rented from ICBF or an ICBF-approved service provider, and the farmer does the recording himself).

- 3. Technician recording of weights using scales provided by ICBF or an ICBF approved service provider.

In all cases, weights must be recorded on the ICBF database. Farmers with suckler herds must weigh calves once between 150 to 250 days of age. Non-suckler farmers must weigh cattle once within 30 days of arrival on the farm or as early as possible in the finishing period.



Task 3

Increase the genetic merit of the herd by using one of the



The payment for the BTAP should be seen as an incentive not a payment. Farmers need to view BTAP as a route to increased overall farm profitability while meeting new friends along the way

following options listed:

➔ A. Use five-star AI bulls on overall Suckler Beef Value (SBV) or on the maternal sub index (within or across breed) on at least 25% of the beef cow herd.

➔ B. Participate in Gene Ireland; this will be verified by ICBF.

➔ C. Use a 5-star stock bull. A farmer must use a 5-star stock bull (five stars within breed or across breed is acceptable) on overall SBV or on the maternal sub index in his herd.

This task is a qualifying task for one year only, i.e. it cannot be selected by a participant in more than one year of the programme.

➔ D. Improve maternal traits in the herd by using heifers that have four stars for daughter fertility or for daughter milk (or equivalent on any future development of the maternal beef indexes).

In this task, a farmer must replace

15% of his herd (based on number of cows in the herd) with heifers who have four stars for either daughter milk or daughter fertility, to satisfy this requirement. (This option will be available from 2013.)



Task 4 (Qualifying task in one year only)

For farms stocked at less than 170kgs/Ha, complete a whole farm soil analysis for the entire farm. Soil samples must be taken in accordance with the procedure outlined in schedule one of S.I. No. 610 of 2010.

Applicants who are required to apply for nitrates derogation or to complete a whole farm soil analysis as a condition of other DAFM schemes are ineligible for this task. Soil samples must be taken after the commencement of the programme.



Task 5

Reseed a minimum of 10% of the net owned and leased

grassland area (excluding commonage, habitats and rough grazing) of the farm. Receipts for all purchases must be retained by the participant and presented to the facilitator for verification.



Task 6

Complete a herd health plan with a veterinary surgeon. Those

availing of this option in 2012 must join the voluntary Bovine Viral Diarrhoea (BVD) eradication programme in that year (verification will be through ICBF).



Task 7 (Qualifying task in one year only)

Register all calf birth information online (including sire details and calving ease), maintain the DAF herd register online and apply for Single Farm Payment online. All three of these elements must be undertaken to qualify for this task.



Task 8 (Qualifying task in one year only)

Put a rotational grazing system

in place on the farm, with a minimum of six grazing divisions per grazing group and each division must have its own water supply. Grazing divisions may be through permanent fencing or through temporary electric fencing which may be rotated around the farm.

The payment for the BTAP should be seen as an incentive not a payment. Farmers need to view BTAP as a route to increased overall farm profitability while meeting new friends along the way.

Nature holds the key

Mark Moore
Editor, Today's Farm



The ProSafeBeef project has identified a number of natural post-slaughter technologies which result in safer, more tender, beef for consumers and potentially better prices for producers.

As the memory of food scares fades, some consumers still hesitate to buy beef. They see it, particularly the better cuts, as a luxury — more expensive than poultry or pork — and sometimes unexpectedly tough. To justify the price premium, consumers want not only ever-higher levels of food safety throughout the food chain but also predictable eating quality — particularly tenderness.

A major project lead by Teagasc 'ProSafeBeef' has delivered new technologies, many based on naturally occurring chemicals and organisms. These technologies can assure food safety while also ensuring a more consistent and healthy food experience for consumers. The beef industry is worth €75bn in Europe alone. Happier customers should boost demand at the butcher's counter.

Project completion

The ProSafeBeef project is nearing completion after five years focused on beef eating quality, safety during handling and processing and identifying and growing new markets — particularly for the cheaper cuts of meat.

The project has been co-ordinated by Teagasc

Food Research Centre, Ashtown, Dublin and involved 41 leading research and industrial organisations from Europe, North and South America, Australia and New Zealand.

"Consumers and beef producers worldwide will benefit from the ProSafeBeef project," says Geraldine Duffy of Teagasc, Ashtown.

"New and existing consumers choosing beef more often should result in higher average prices over the long term."

A natural approach

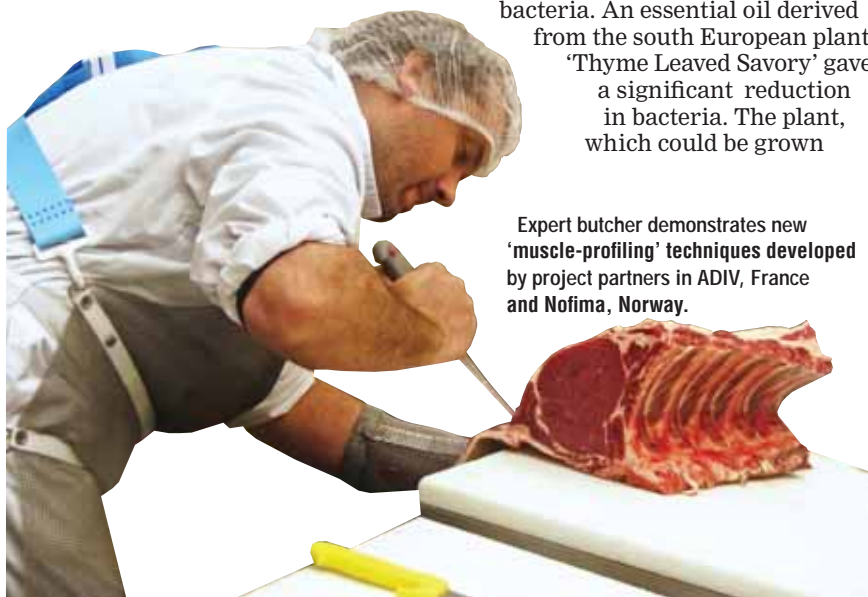
The ProSafeBeef project has focused heavily on preserving the safety and quality of meat. Some surprising products proved highly effective.

Shellac, a sticky resin derived from insects, and already used as a coating in the food industry proved highly effective for immobilising or sticking bacteria onto beef hides.

Even apparently clean hides can be infected with undesirable bacteria. Results from experiments where shellac was sprayed onto hides resulted in fewer bacteria being transmitted from the hide onto the carcass during processing.

Bacteria are quick to colonise moist food surfaces, such as meat, and the ProSafeBeef scientists investigated other natural antimicrobial systems, including plant extracts to control bacteria. An essential oil derived from the south European plant 'Thyme Leaved Savory' gave a significant reduction in bacteria. The plant, which could be grown

Expert butcher demonstrates new 'muscle-profiling' techniques developed by project partners in ADIV, France and Nofima, Norway.



in Ireland, has traditionally been used to disinfect wine barrels. The more familiar herb, oregano, is also a source of anti-microbial oil. Reducing the use of synthetic and chemical disinfectants will further boost the image of beef.

Good bacteria

Naturally occurring 'good' bacteria such as lactobacilli, themselves harmless, can also be used to ensure that meat is properly and safely stored. Lactobacilli can prevent dangerous bacteria colonising meat and researchers found that these type of benign bacteria be used in an indicator device or 'time-clock' which, when incorporated into the meat pack, would enable retailers to measure how long meat has been stored and at what temperature.

Healthy beef

Beef needs some fat to give it flavour and succulence but some types of fat are healthier than others. ProSafeBeef showed that beef produced from

to best quality beef



ABOVE: Dr. Geraldine Duffy, co-ordinator of the ProSafeBeef Project.

LEFT: Dr Dragan Antic of the University of Novi Saad, Serbia, demonstrating experimental application of shellac to bovine hides.

fresh grass and grass/clover silage has higher levels of beneficial polyunsaturated fats than concentrate diets.

Work on the project is helping scientists to understand the interactions between the animal's diet, the mix of bacteria in the rumen, and, ultimately, the level and nature of the 'good' fats in the meat.

The project also investigated how cooking methods can influence the balance of fatty acids on the consumers' plate and whether meat cuts can be treated to increase the percentage of healthy fat.

High-tech spectroscopy has been shown to have potential to measure the level and nature of fat in a particular carcass. Ultimately, genomics may be used to breed for meat quality as well as performance traits.

Tender beef

The ProSafeBeef project has also examined the potential of a system to predict beef quality for consumers. Researchers on the ProSafeBeef project tested the Meat Standards Aus-

tralia model on beef in Ireland and France. They found that it predicted the meat quality score relatively accurately. The MSA system predicts quality levels of each part of the carcass, depending on how long it has been aged and the cooking method chosen. The MSA system offers beef processors a potential marketing message for consumers who feel pork or poultry are more consistently tender.

An increase in consumers satisfaction, coupled with rising incomes, should lead to higher consumption rates and industry profitability.

An eating-quality guarantee system, if widely introduced, should contribute to market development and improved competitiveness of the European beef industry.

Residues

The ProSafeBeef project has also delivered a range of hi-tech systems, which can assist with the detection of residues, of anthelmintics for example, in beef. A survey of 1,061 samples found residues in just 26

samples and these all had levels below EU limits. Such technologies will help the industry to prove that beef is safe.

New cuts

The ProSafeBeef project is also assisting butchers through 'muscle profiling'. This means butchers can reduce the amount of meat sold as mince, increasing the total value of the carcass. ProSafeBeef also investigated a range of mechanical and chemical (using natural marinades) ways to tenderise meat.

Farmers have played their part through farm assurance schemes and, now, the beef processors can build on that by implementing the findings of ProSafeBeef. The findings from the ProSafeBeef project can benefit everyone in the beef foodchain, including producers, processors and consumers," concludes Geraldine Duffy. "The future for beef looks bright."

➔ The project is funded under EU Framework 6. See www.prosafebeef.com for further information.

Price only part of the picture

A health set-back shows the importance of ewes reared per ewe on this Sligo farm



Tom Coll, Drystock B&T Adviser, Sligo/Leitrim/ Donegal AMU

The main factors influencing gross margin on lowland sheep farms are lambs reared per ewe to the ram, stocking rate, lamb price and variable costs. Improving one or more of these can substantially increase the profitability of a sheep enterprise. Equally, a set-back in any of these areas can hit margins.

Philip Higgins (*pictured right*) farms a mixed enterprise of suckler cows and sheep with his wife, Amanda, and their three children, Jonathan (16), Naomie (14) and Hannah (8), in Skreen, Co Sligo. The children help out on the farm and have a keen interest, especially in the sheep.

Sheep enterprise

The sheep enterprise consists of 222 lowland ewes: 25% are mules, 20% Texel X mules and the remaining 55% Suffolk X mules stocked at eight ewes to the ram per ha. Mature ewes are large at over 90kg. Cull ewes slaughtered in 2011 averaged 42.5kg carcass and made €118, or €19 more than the previous year.

Suffolk and Texel rams are used both as terminal sires and for breeding replacements. Traditionally, Philip sources mule replacement ewe lambs at the annual sale in Ballinrobe. The mature mule ewes are used to breed replacements.

In 2010, a total of 167 mature ewes and 55 ewe lambs, 28 of which were home bred, went to the ram in early September. The ram effect was used

Draft date	% of total
End May	44%
End June	62%
End July	77%
End Aug	87%
End Sept	92%

both on mature ewes and ewe lambs. Lambs weaned per ewe and ewe lamb put to the ram in 2011 was 1.5, which is slightly below the Teagasc lowland sheep BETTER farm target of 1.6. The previous four-year average for the Higgins farm was 1.77, which includes 20% to 25% ewe lambs to the ram each year.

Toxoplasmosis

An outbreak of toxoplasmosis abortion in the ewe lambs accounted for the reduced figure in 2011 and was a result of the unavailability of the vaccine in autumn 2010. Ewes were scanned for the first time on the farm in 2012. Mature ewes scanned at 1.95 per ewe put to the ram with a pregnancy rate of 98%; ewe lambs scanned at 1.71 with a pregnancy rate of 99%.

With a targeted mortality rate of less than 10%, the scan results should improve the lambs weaned per ewe put to the ram figure close to the previous four-year average; ewe lambs were vaccinated for toxoplasmosis in 2011.

Triplet lambs are cross fostered at birth, even onto ewe lambs. Good quality well-grown ewe lambs are selected for breeding at first draft and are in excess of 60kgs going to the ram.

Lambing started on 1 February and by 20 March, 95% of the flock had lambed. The average lamb price achieved in 2011 was €113. Details of 2011 lamb drafting can be seen in *Table 1*. The lambs drafted from August onwards were mainly those reared by ewe lambs.



*Includes 20% to 25% ewe lambs to the ram

Year	2009	2010	2011
Gross Margin /Ewe	€60	€96	€100
*Lambs weaned/ Ewe to the ram	1.79	1.74	1.5
Stocking rate Ewes/Ha	7.9	7.2	8.1
Average Lamb Price	€81	€97	€113
Concentrates fed / Ewe + Lambs	€29	€35	€30



The 2011 lamb kill from the Higgins farm shows that 51% of lambs graded U with 49% grading R. Ninety one per cent of lambs were in fat class 3 and the average carcaseweight for all lambs sold was 20.5kg, an increase of 0.4kgs compared with 2010.

Table 2 shows how gross margin per ewe has increased from €60 in 2009 to €100 in 2011. The decrease in lambs weaned per ewe/ewe lamb put to the ram due to the toxoplasmosis outbreak equates to a decrease of approximately €22 per ewe in gross margin in 2011.

Stocking rate

Stocking rate has increased slightly over the last three years. Average lamb price has increased from €81 in 2009 to €113 in 2011. This is a result of improved lamb selection and drafting

and the lift in market price.

Philip is a founder member of the Sligo/Leitrim lamb producer group through which he sells all his lambs to Irish Country Meats in Navan. All lambs were sold directly off the farm in 2007 at an average price of €66.50 prior to the formation of the group. The 2011 lamb kill from the Higgins farm shows that 51% of lambs graded U with 49% grading R. Ninety one per cent of lambs were in fat class 3 and the average carcaseweight for all lambs sold was 20.5kg, an increase of 0.4kgs compared with 2010.

In short

- The suckler enterprise consists of 49 cows. The plan over the next three years is to increase cow numbers to 60 - 40 cows calving in spring and 20 in the autumn. Twelve heifers purchased in 2011 have been inseminated to calve in autumn 2012.
- This will fit in with the sheep enterprise and spread the workload around calving and lambing. Stock will be sold as weanlings rather than forward stores to facilitate the housing of extra cows and to simplify the system.
- Farm gross margin/ha has increased from €323/ha in 2009 to €709/ha in 2011, with room for further improvement.

dairying

When once is enough

This will be Michael Wall's fourth year milking his cows once a day (OAD). Brian Hilliard of Teagasc Dungarvan tells his story

In 2009 and 2010, Michael, who farms at Colligan near Dungarvan, milked twice a day (TAD) from calving in late January to the 1st April and then once a day (OAD) for the remainder of the year. In 2011, he milked OAD for the whole lactation from calving to drying off. He did so to avoid any possible super levy penalty in the 2011/2012 quota year. As it happened, he ended up drying off earlier than normal as he was going over quota. He milked 93 cows on a grazing platform of 38.4ha. Herd EBI is €139.

Effect on yield

"The biggest hit to yield was the first year (2009) as certain cows did not perform well when milked once a day, it was also a bad weather year," says Michael. "In subsequent years, these cows culled themselves out of the herd leaving us with cows that are more suited to OAD" (Table 1).

In terms of kilos of milk solids/cow delivered to Glanbia, Michael's herd is now very close to where it was in 2008, the last year he milked twice a day i.e. 350kg/cow in 2011 versus 362kg in 2008 (Glanbia – ICBF report which includes all dairy cows on the farm over the year, milking cull cows, etc). These figures exclude milk fed to calves. Meal fed last year amounted to 470kg/cow. "We could have produced more last autumn if not for the quota situation. However, we now supply more milk solids due to the increase in cow numbers from 84 to 93," says Michael.

It is interesting to note from the

Glanbia – ICBF 2011 Dairy Herd Performance Report for spring calving herds that the average supply for Michael's herd at 350 kg MS/cow on OAD milking is higher than the Glanbia average of 343 kg/cow on TAD milking.

The milk recorded figures for 2011 (Dairygold A8 scheme) show that the average yield was 4,474 litres/cow or 369 Kg of MS /cow in 256 days milking.

Effect on Fat & Pr%

While milk volume has decreased, fat and pr% have risen substantially, although they were good to begin with, when last milked TAD (4.2 & 3.54%). Fat & pr in milk delivered in 2011 was 4.64% and 3.77% respectively resulting in an excellent price of 41c/litre (Table 2). The higher fat & pr % help to offset somewhat the reduced volume.

Apart from the effect of OAD on fat & pr %, the quantity of high quality grass in the cows' diet throughout the year is also a big influence.

Michael's cows go straight to grass after calving and he strives to keep quality grass in front of them the whole time.

He was one of the first farmers in the area to start measuring grass covers nearly 20 years ago. Michael also puts a good deal of effort into AI bull selection, choosing bulls with high fat and protein figures.

SCC

One of the first questions farmers ask about OAD is how it affects SCC? In Michael's case, he has it well under



control with an SCC last year of 134,000 cells/ml down from 161,000 in 2008 when he last milked TAD. However, he always kept a close eye on SCC and used his milk recordings to good effect throughout the years, as well as adopting good SCC reducing practices such as the use of CMT (California Mastitis Test) after calving, wearing gloves and dipping clusters in peracetic acid.

Fertility

One of the major benefits of OAD is increased fertility/more compact calving, less culling of empty cows and more stock for sale (see Table 1 – six-week calving rate).

"We aim to have close to 90 % of cows/heifers to calve in the first six weeks this spring, with all cows calved in 11 weeks," says Michael. Such compact calving results in more days at grass and a more even bunch of replacement heifers.

Initially, the six-week calving rate went from 62% on TAD milking (2008 breeding season) to 87% on OAD (2009 breeding season). In the 2010 breeding season, however, a lot of cows for some unknown reason came bulling after first service, many at irregular intervals and were served again as repeats. It subsequently transpired that most of those cows were actually in calf and the repeat service caused the loss of the first pregnancy, result-

Table 1: ICBF dairy herd performance report

	Cow numbers	KGs milk solids sold to Glanbia	Milk solids per cow	Fertility six-week calving %
2008 (TAD)	84	30,408	362	58
2009 (OAD)	87	23,875	275	62
2010 (OAD)	91	31,238	343	87
2011 (OAD)	93	32,555	350	78

Source: Glanbia – ICBF Dairy Herd Performance Report



Michael (pictured) with his daughter Gillian and son-in-law Neil O'Sullivan and Fionn.

ing in a reduced six week calving rate of 78% last year.

Lameness

Lameness is no longer a big concern on this farm. It has been a few years since any cow was culled for it.

Cow breed

Michael has been cross-breeding since the late eighties, initially with the French breeds Montbeliarde and Normande, then using Scandinavian Red and, in recent years, Jersey/Kiwi Cross. Cattle are no longer a part of the system, just cows and replacements for the herd and for sale.

Many of the cows are now three way crosses, eg. 50% Jersey, 25% Holstein and 25% Norwegian Red.

He finds the Jersey crosses are doing well on OAD.

Financial performance

The 2011 Profit Monitor shows Michael's net profit was 17c/litre, approximately 1.5c higher than the average of 1,067 profit monitors to date (net profit figure is not a cash figure as it includes depreciation costs and excludes premia payments, etc).

While his variable and fixed costs per litre are higher than the average (Table 3) due to lower milk volume, his margin is higher because of the higher milk price from the excellent fat & pr %.

His gross output figure is 4.5c/litre higher than the average due to good stock sales.

Savings/profit on OAD are made with a very compact calving pattern, lower replacement rates/extra stock sales, less veterinary/electricity/labour/AI costs, etc.

Summary

OAD milking has many advantages for man and beast. It is a system that Michael is going to stay with and develop further. Yield/cow will continue to increase as a bigger % of the herd will be in their prime lactations (less first calvers) due to better longevity on OAD.

He still milks the cows at the same time in the morning as he did when milking twice a day but there is a lot less pressure on him now to complete other jobs.

Many farmers went on OAD last year due to quota issues and more are looking at it as system long term.

Good management is as important, if not more important, with OAD milking. For example, good mastitis detection is critical as you only come in contact with cows once a day. Quality grass is vital as cows milked OAD will suffer bigger reductions than cows milked TAD on poor quality grass.

Good yields must be obtained to dilute costs especially fixed costs. While

Table 2: 2011 milk recording results

Days milking	256 days
Yield/Cow	4474 Litres (956 Gals)
Kg MS/Cow	369
Herd EBI	€139

Table 3: Glanbia figures

	Fat %	Pr %	SCC
2008 TAD	4.20	3.54	161
2009 OAD	4.37	3.75	142
2010 OAD	4.50	3.68	124
2011 OAD	4.64	3.77	134
2012 OAD			

Table 4: OAD v average 2011 profit monitors

	M.Wall OAD	Avg. TAD
Milk Price	41	36
Gross Output	44	37
Total Var.Costs	13	11
Total Fixed Costs	13.5	10
Net Profit	17	15.5

All figures in cent/litre

the litres of milk/cow in Michael's herd was 20% less than the milk volume yield of the top 10% in last year's profit monitor results to date, the yield of milk solids was only 10% less.

Performance to date (22 February)

There are a total of 107 cows to calve this spring including 25 heifers, 22 of which have calved.

Calving started on 28 January and by 22 February, 74% had calved in 26 days (79 calvings).

Cows went to grass on 2 February by day and on 7 February by day and night. They are getting 3 kg of a 16% pr ration. No silage is fed. The most recent fat & pr was 5.61% and 3.88% and scc was 82,000. Yield was 19.2 litres/cow or 1.88kg of milk solids.

OAD in June

Many farmers in the Glanbia area are concerned about their June supply exceeding their reference June supply %, thereby incurring a penalty. The situation is aggravated with the threat of a superlevy when less milk is supplied in the spring and autumn causing the June supply % to spike up. One possible solution is to milk cows once a day in June, which is a five-week month. Depending on the situation, you could milk OAD for the entire five weeks or for three to four weeks.

dairying

Teagasc/Glanbia joint programme 2011 to 2013



Richard O'Brien
Teagasc Business and Technology Adviser and co-ordinator of the joint programme



The Teagasc/Glanbia joint programme was launched this year and will run for three years. The overall purpose of the joint programme is to position dairy farmers in the Glanbia area to take advantage of growth opportunities that will arise post 2015.

The joint programme will have five objectives:

- ➔ Improve knowledge transfer and practice adoption.
- ➔ Increase grass utilisation.
- ➔ Increase milk solid production per cow and per hectare.
- ➔ Improve both herd fertility and



Table 1: The 11 farmers on the Teagasc/Glanbia programme

Area	Farmer
Waterford	Adrian and Pierce Casey, Faha, Kilmacthomas, Co Waterford
Kilkenny	Denis Kenny, Killeen, Kilmanagh, Co Kilkenny
Tipperary	Dermot and Richard Lanigan, Ballinurra, Carrick on Suir, Co Tipperary
Laois	Eamonn Duggan, Tubberboe, Durrow, Co Laois
Kildare	Francis Allen, Crookstown, Ballytore, Co Kildare
Meath	David and Peter Farrell, Ringlestown, Kilmessan, Co Meath
Louth	Purcell/McGlew, Kiltallaght/Rinkinstown Farms, Kiltallaght, Termonfeckin, Drogheda, Co Louth
Wicklow	Paul Kinch, Rock Little, Arklow, Co Wicklow.
Wexford	David French, Raheenvarron, Newbawn
Carlow	Piers Dennis, Fort Granite, Baltinglass. John Roche is farm manager.
Cork (East)	Tom Dineen, Ballyknock North, Ballynoe, Co Cork

Table 2: 2011 physical results from Teagasc/Glanbia monitor farms

	2011	2010
Cow Numbers	125	116
Milking Platform Stocking Rate(lu/ha)	2.89	2.6
Yield/Cow (l)	5200	5622
Sales/Cow(€)	4591	5417
Fat %	3.94	3.86
Protein %	3.38	3.37
Milk Solids/cow(kg)	392	418
Meal Fed (kg)	698	1055

calving pattern.

➔ Improved financial planner and cost control.

The co-ordinator of the programme is Richard O'Brien, Teagasc Kilkenny. The programme will be delivered by 28 dairy advisers through discussion groups, farm walks, seminars, workshops and newsletters.

An integral part of the programme is the establishment of 11 monitor farms.

These farms will be used to show best practice in the delivery of the joint programme. Each monitor farm will work to an agreed physical and financial plan.

Performance data from these farms will be published regionally on local papers, Glanbia newsletters, *Today's Farm* and other national papers. Each farm will host a farm walk every year, outlining their performance and their plans.

The 11 monitor farms completed the 2011 profit monitor recently.

Seven of the farms are spring calving and the other four are liquid/winter milk producers at approximately 50% calving in the autumn and 50% in the spring.

➔ Cow numbers increased and stocking rate on the milking platform increased. More cows are being put in place for future expansion.



Table 3: 2011 financial results from Teagasc/Glanbia monitor farms

Cent/Litre	2011	2010
Gross output	36.46	31.51
Co-op price	35.35	31.20
Total variable costs	11.36	10.82
Total fixed costs	10.94	9.87
* Net margin	14.17	10.83
* Net margin/cow(€)	749	608

* Excludes all direct payments

LEFT: Dermot Lanigan, Peter Farrell, Andrew Purcell, Denis Kenny, Alf McGlew, David French, John Roche and Tom Dineen.

➔ Quota restrictions in 2011 led to decrease in meal fed and shorter lactation and resulted in a lower milk yield per cow.

➔ The option for 2012 would be to hold or reduce cow numbers and stay within the Glanbia Seasonality Scheme and sell cull cows and high value cows to increase output, while prices remain high.

Financial

➔ Gross output increased by almost 5c/litre, driven by a rise in co-op price of 4c/litre and increase in other sales (calves/cull cows) of around 1c/litre.

➔ Meal feeding decreased by almost 1c/litre due to a better grass growing year and quota restrictions. However, fertilizer cost increased by 0.6c/l, vet by 0.3c/l and other variable costs increased marginally resulting in a rise in total variable costs of 0.5c/litre.

➔ Practically all of the 1c/litre rise in total fixed costs were attributed equally to higher machinery running costs, loan interest increase and land leasing charges in 2011.

➔ Net margin increased by over 3c/litre in 2011 to 14.7c/litre or €749/cow.

This margin (excluding depreciation) is required to meet principal repayments on borrowings, taxation and reward the farmers for their own labour input.



Gross output increased by almost 5c/litre, driven by a rise in co-op price of 4c/litre and increase in other sales (calves/cull cows) of around 1c/litre

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Does cow synchronis

Synchronisation can be used to maximise submission rate and get cows pregnant earlier.

Mark Moore Editor, Today's Farm

A recently completed study by researchers at Teagasc Moorepark suggests synchronisation can be a useful tool in the management of reproduction in lactating dairy cows. Synchronisation of heifers is already commonly practised, as animals that have their first calf early in the calving season are likely to remain in the herd longer, and have a longer productive life.

The large scale trial on cows, the first of its type in Ireland to look at synchronisation of ovulation, included over 1,600 cows on eight farms. Cows received one of three synchronisation protocols or were managed normally, without synchronisation.

"Synchronisation is costly (between €24 and €40 per animal), and time consuming, and is likely to only be appropriate for some cows in some situations.

"It is certainly not a magic solution, but when used strategically it can assist farmers to improve their calving pattern," says Teagasc Moorepark researcher Stephen Butler. The work formed the basis of a PhD project carried out by Mary Herlihy, also at Teagasc Moorepark.

The benefits of a tight and early calving pattern are clear:

- Longer lactation
- More time on grass during lactation
- A higher percentage of cows bred with AI
- Management advantages — more cows calve within a shorter 'window'.
- Better milk supply profile potentially avoiding mid-season price penalties.

In the Teagasc trial, all cows in the herd (except those in the control group) were given a synchronisation treatment. The study was designed so that cows assigned to synchronisation treatments were calved at least six weeks before AI. To ensure that late calving cows in the herd were included, three rounds of synchronisation were needed on each farm (see *Figure 1*).

The first round of synchronisation was carried out to facilitate AI of



Cows treated with synchronisation protocols within the herd should be painted to allow for easy identification from untreated herdmates. Mary Herlihy is pictured.

eligible cows on the first day of the breeding season — say, 25 April. To be eligible to be served on this day, cows would have to have been milking since at least 14 March (42 days). The synchronisation protocols used took 10 days, meaning that, for this group of cows, the synchronisation protocols began on 15 April. The cows were then served on 25 April.

The second group of cows would be served with AI three weeks after mating start date on 16 May and the last group of cows three weeks later, again on 6 June, each time following the 10-day protocol. Repeat heats from the first group would coincide with the synchronised heats for the second group. Similarly, repeat heats from the second group would coincide with the synchronised heats for the third group. The synchronisation protocols used in the study are indicated in *Figure 2*. All treatments were carried out after the morning milking with the exception of the second GnRH.

"As expected, the same percentage of cows in each treatment were pregnant at the end of the breeding season, whether cows were synchronised or not," says Stephen Butler. "But cows on the synchronisation

treatments got pregnant earlier during the breeding season. On one treatment (CIDR_TAI), up to 40% of cows established pregnancy on the first day of the breeding season.

How can it work on farms? In normal farming situations, synchronisation is most likely to be used on a small number of 'problem' cows, not the full herd approach used in the trial. "If a farm has a good tight calving pattern with 90% of cows calving within six weeks, synchronisation isn't required," says Stephen Butler. "But if cows are not showing heat or are late calvers, it may help to improve the herd's overall calving pattern."

The process begins several weeks before mating start date with pre-breeding heat detection to identify cows that are cycling and to allow you to predict when they will be on heat during the first three weeks of the breeding season.

If cows have not shown signs of heat during the period of pre-breeding heat detection, either they are not cycling or they are cycling but are not showing behavioural signs ('silent heat'). Both types of cow are candidates for synchronisation.

Synchronisation have a role?

FIGURE 1

Synchronisation Schedule

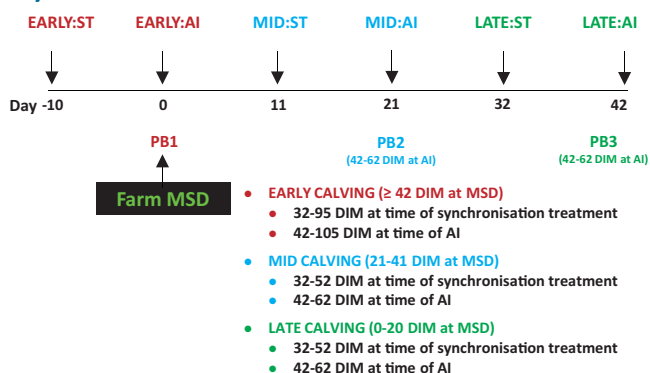


FIGURE 2

Synchronisation Treatments

	CIDR_OBS	CIDR_TAI	OVSYNCH	CTRL
Day -10	GnRH + CIDR	GnRH + CIDR	GnRH	-
Day -3	PGF _{2α}	PGF _{2α}	PGF _{2α}	-
Day -2	CIDR out	CIDR out	60hr	-
Day -1 (PM)	-	GnRH	GnRH	-
Day 0 (MSD)	AI at observed oestrus	TAI	TAI	AI at observed oestrus

GnRH: 2.5 mL Receptal i.m. (10 µg buserelin)
 Prostaglandin F_{2α}: 5 ml Lutalyse i.m. (25 mg dinoprost)
 Progesterone: 8 d CIDR (1.38 g P4)

In the experiment all cows were synchronised (Figure 1). Early calving cows who would have at least 42 Days in Milk (DIM) by Mating Start Date (MSD) were synchronised 10 days pre MSD (Early ST) and received AI on the MSD. AI was used again 21 days after MSD – with synchronisation 10 days prior. This is the Mid Calving group. The late calving group was synchronised 32 days after MSD and received AI ten days later.

Cows that are identified to be cycling during the pre-breeding period will be served as normal after being observed in heat after the breeding season has begun.

Cows not detected in heat and that are more than 32 days calved can be treated with CIDR_TAI, allowing insemination ten days later.

A prescription is required from a vet to source these hormones. Great care is needed in applying the synchronisation protocols.

Good drafting facilities are essential to separate the cows that require treatment after milking. It is vital that the correct cow gets the correct treatment at the correct time.

Synchronisation can be used to accelerate the return of late calving cows to heat (though they must be six weeks post calving at the time of AI), which may mean they can remain in the herd rather than being culled.

“For farmers who want to improve their calving pattern, synchronisation has a role,” says Stephen Butler. “But it should not be seen as a routine substitute for basic skills, such as heat detection, having cows at the right condition score, and deciding if a cow needs to be culled.”



The benefits of a tight and early calving pattern are clear, according to research carried out at Teagasc Moorepark

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Hard work delivers compact calving in Waterford

Tom Fallon
Teagasc business & technology dairy adviser, Mullinavat

In spring milking herds, a cow calving in May is €400 less profitable than a February calver.

Compact calving is critical to avoid seasonality penalties. In the Glanbia catchment, some farmers will be faced with culling late calving cows or feeding extra calves to reduce deliveries in June. Compact calving and calving heifers with the cows (ideally, the heifers should calve one week before the cows) will improve the supply profile over time.

Thomas Phelan, his wife Mary and their son John milk 130 cows with an average EBI of 126 on a milking platform of 61 hectares in Kilmeaden, Co Waterford.

Calving started on 8 February, with the aim of having 50% of the herd calved within 19 days. The herd peaks about two months later and milk supplied to Glanbia tends to be fairly even for the months of April, May and June. The farm's reference June supply rate is 14.5%.

The Phelans use 10 to 12 tubes of tail paint, six vasectomised bulls and they scan all their cows one week before the start of AI. Cows not cycling and needing intervention, such as a 'Cedre device', are treated within a day. Derek Ryan, an experienced scanner from Tipperary, provides this service. John is convinced that this is very worthwhile.

All the cows and heifers are tail painted the day before AI starts. John finds that the heifers tend to calve seven to 10 days ahead of the cows even though the start date for AI is the same. All cows are checked for paint removal at milking time. Even if there is one quarter of the



Tom Fallon, John Phelan and Thomas Phelan.

tail paint gone, a transponder is put on her tail and she is automatically drafted for AI and repainted a different colour.

Cows on standing heat around milking time will be drafted for AI at the next milking. The tail paint is topped up every 10 to 12 days. Last year, 176 AI straws (on 130 cows and 70 heifers) were used in the first three weeks, so picking up animals on heat was not an issue in this period.

The six vasectomised bulls will spend one month with 95 maiden heifers this year and will then be moved to the main herd.

They are each fitted with a chin ball with rattle paint. John has mentioned that maiden heifers would be 'destroyed' with paint from the chin ball, so there is no problem with observation here!

The bull is vasectomised at between six and nine months costing €120. Young, yearling vasectomised bulls are used with the heifers.

A bigger, older bull may dismount a heifer without the chin ball touching the heifers back and releasing the paint.

These bulls can be as dangerous as an intact bull and need to be vaccinated for leptospirosis and BVD, where appropriate.

Table 1 highlights the importance of breeding for fertility as well as the work involved in cows back in calf.

Table 1: Key performance indicators

	Target	Phelan farm
Submission rate (%)	90	88
Six-week pregnancy rate	90	73 (93 for heifers)
Overall pregnancy rate	90	94
Calving interval	365	367
Days to calve 50% of herd	21	19
Herd fertility subindex	100	84

Active farmland plays a key role for Irish birds



The Curlew is on the red list of birds of highest conservation concern due to huge declines in the breeding population (PICTURE: Colm Clarke).



Catherine Keena,
Countryside
Management
Specialist, Teagasc
Crops, Environment
and Land Use
Programme

Ireland is important for its native birds in a European context, and in many cases a global context. All birds are afforded protection as an important part of our heritage, with some exceptions being made for species that cause serious crop damage or are a threat to public health and safety.

Many farmland birds have experienced large population declines and range contractions. Of the nineteen species of greatest conservation concern in Ireland, ten are dependent on farmland habitats at some point during the course of the year: Grey Partridge, Quail, Corncrake, Golden Plover, Lapwing, Curlew, Redshank, Barn Owl, Twite and Yellowhammer.

These birds are helped by the retention of landscape features such as hedgerows and drains and protected under the Birds Directive.

Farmers receiving payments under the Single Payment Scheme must comply with cross compliance rules, but apart from that, agri-environment schemes such as REPS and AEOS provide opportunities for conserving

birds over and above the requirements of cross compliance.

The Minister for Agriculture, Food and the Marine, Simon Coveney TD, recently launched an Action Plan for Lowland Farmland Birds. This is one of ten action plans developed by BirdWatch Ireland together with over thirty stakeholders, including farm bodies, to protect Irish birds. Other action plans include marine, upland, urban, raised bog and woodland birds.

The long-term vision and objectives for lowland farmland birds were identified through a stakeholder consultation workshop.

Factors relating to the conservation of lowland farmland birds included habitat loss, degradation and fragmentation; alien invasive species and predation; illegal persecution and poisoning; and flooding.

The required targets and actions



Education and awareness are particularly important for the long-term conservation of the agricultural environment and its birds.

were also highlighted by stakeholders. Research and monitoring are essential for conservation. Policies and legislation are often the driving forces behind land management and conservation. Protecting priority birds within and outside of designated areas may often require special management or particular measures to be taken. It is important that necessary measures can be provided in a species' territory, particularly if the species is threatened or only has a small population.

Education and awareness are particularly important for the long-term conservation of the agricultural environment and its birds. Most importantly the plan highlights that working with a wider range of stakeholders is required to help Irish birds including landowners, agencies and the general public. It is important to allow farmers to farm commercially while protecting birds.

Birds

Irish culture is full of references to birds and many of the Irish names for birds hark back to our historically strong links to the environment. These grounds alone should be reason enough to protect Irish birds, but birds and bird numbers also provide an indication of the health of ecosystems, habitats, species and biodiversity (the proverbial canary in the

Continued on page 24 »

«Continued from page 23

coalmine). Birds are well suited to the role of indicators. They are relatively easy to survey and there is a wealth of historical data on many species, in comparison to other animals or plants, which helps in identifying trends. The ecology of some species is well understood which allows us to identify underlying reasons for population changes.

Ireland has signed up to and ratified a number of policies and legislations that explicitly include the protection of wild birds. These include the European Birds Directive, The Ramsar Convention, The Bonn Convention, The Agreement on the Conservation of African-Eurasian Migratory Waterbirds, The Bern Convention, etc.

The conservation of internationally and nationally important birds will also help protect biodiversity, ecosystems, communities and our economy, as well as ensuring we do not receive fines for non compliance with international obligations.

Lowland farmland birds

Lowland farmland birds are a diverse mix of species that include waterfowl, game birds, raptors, waders and many passerine species. The reasons for this diversity is largely due to the diversity of agricultural habitats in the country.

Migratory swans and geese, such as Bewick's Swan and Barnacle Goose, use lowland farmland pastures during the winter for feeding and roosting. These birds graze on grass swards or feed on tubers or roots. Historically, widespread game birds, such as the Quail and Grey Partridge, utilise tillage, but have undergone dramatic declines (to populations of just a few individuals), due mainly to the loss of small-scale tillage in a landscape now dominated by pasture.

The Corncrake, dependant on low intensity meadows, is an example of a well-known and common bird declining to near extinction in a matter of decades. A summer migrant from sub-Saharan Africa, the Corncrake still breeds in the north-west and west with a dwindling population in the Shannon Callows and occasional birds scattered in other parts of the country.

The switch from hay to silage production is almost solely responsible for the Corncrake's demise. Breeding

waders are dependent on lowland pastures grazed by cattle, but numbers have declined substantially.

Curlew, Lapwing, Redshank, Snipe and Black-tailed Godwit are ground nesters, often in open short grasslands with grassy hummocks. They are at particular risk from habitat loss associated with agricultural intensification. Predation and, in some parts of the country, flooding during the breeding season are also important factors.

Raptors such as the Barn Owl and Kestrel play an important role in controlling small mammal populations, and are often seen as beneficial to farming. These species have been affected badly by pesticide use in the past and poisoning is still a threat. Hen Harriers move down from their upland nesting areas after the breeding season and regularly hunt over farmland in winter. The reintroduced

Red Kite could be an increasingly common sight during the next ten years and will be an important scavenger of dead animals in the countryside.

Swallow, Starling, House Sparrow, Tree Sparrow, Linnet and Yellowhammer are all associated with agricultural areas and farmyards while

Whinchat and Chough are more localised. Other

birds in this group are scarce migrants from Europe and occur on a regular or semi regular basis in very small numbers.

These include the Turtle Dove and Yellow Wagtail.

A once common and widespread farmland bird is the Corn Bunting. As the name suggests, this bird was highly dependent on tillage farming. The Corn Bunting became extinct in Ireland in the late 20th century and is a clear example that extinction is something that can and will happen unless appropriate efforts are taken to conserve our biodiversity.

Lowland farmland bird habitats

Land use in Ireland is dominated by farming, with 61% of the country covered in agricultural habitats. Agriculture has dominated Ireland for thousands of years. Many species of plant and animal have evolved and adapted to take advantage of the new habitats created over time.

This extensive agriculture (as opposed to intensive agriculture) which developed had many benefits for Ireland's wildlife, including its birds.



The ten most threatened

- ↻ Grey Partridge
- ↻ Quail
- ↻ Corncrake
- ↻ Golden Plover
- ↻ Lapwing
- ↻ Curlew
- ↻ Redshank
- ↻ Barn Owl
- ↻ Twite
- ↻ Yellowhammer

Changes in agricultural practices, led by a production-based European policy, have meant many of these traditional extensive habitats have largely been lost.

Lowland farmland in Ireland can be divided into grassland and tillage. Grassland makes up 91% of the agricultural area in Ireland. This consists of extensive and intensive grasslands. Grazing by cattle and sheep and the production of hay and silage are the primary land uses.

Generally, extensive grassland is much more beneficial for wildlife although some birds can utilise intensive grassland. Intensive grassland has usually been re-seeded with higher-nutrient species, such as Perennial Rye-grass (*Lolium perenne*). It also receives higher fertilizer (to maximise yield) and pesticide (to remove competition to the crop) inputs.

Together, these increase the ability of the grassland to support more livestock. Similarly, intensive grassland management permits more mowing



CLOCKWISE FROM CENTRE:

- **Lowland Farmland Action Plan launch, left to right: Anja Murray (BirdWatch Ireland), Alex Copland (BirdWatch Ireland), Oliver McEvoy (Dept. Agriculture, Food & the Marine), Catherine Keena (Teagasc), Minister Coveney (Dept. Agriculture, Food & the Marine), Alan Lauder (BirdWatch Ireland), John Kelly (Invasive Species Ireland), Peadar O'Connell (BirdWatch Ireland).**
- **Barn Owls have used some nestboxes erected under REPS. (PICTURE: Richard T.Mills)**
- **The Stock Dove is an unobtrusive resident farmland bird in Ireland, sometimes confused with its much more common cousin, the Wood Pigeon. (PICTURE: John Fox)**
- **The Corncrake is an example of a widespread common species declining rapidly in a short period of time. The core areas for Corncrake are now found in the northwest of the country. (PICTURE: Billy Clarke)**

and other tractor operations during the year. Extensive grasslands may contain many species of seed producing grasses and weeds that birds feed on, or which support prey species. They are also more suitable for ground nesting birds, as they are less likely to be disturbed.

Tillage land has declined over the last couple of centuries to just 10% of the agricultural land cover. On the remaining farmland, production has increased due to switching from spring-sown to winter-sown crops and due to the greater use of fertilizers. Sowing in winter extends the growing season, offers the potential for increased yields and allows the farmer to harvest the crop earlier.

Winter stubbles (that contain weed and spilt seeds from previous harvest) are very important for many farmland birds and are less readily available if winter sowing occurs. Spring sowing also provides a more favourable vegetation structure than winter sown crops, which have a sward

that quickly becomes too high and dense for many ground-nesting birds. Increased mechanisation (a bigger and faster tractor and more efficient implements) is also likely to reduce opportunities for farmland birds.

The historic practice of mixed farming has largely disappeared and farms are becoming larger, more specialised and increasingly dominated by fewer species. These virtual monocultures are not ideal habitats for many birds, and their populations begin to decline or contract in range to smaller suitable areas.

Hedgerows are associated with the Irish agricultural landscape and are a very important resource for wildlife. Increasingly rare in Europe, hedgerows in Ireland are still common, although they have been reduced in area and quality. With correct management, hedgerows provide nesting sites, food and protection for many farmland birds, and they act as corridors between habitats.

Farm Buildings, especially older,

stone structures, are also important habitats for many birds that use them to nest, roost and search for food such as spilt seeds and grain. Small mammals are also attracted to these sites, providing food for raptors.

Farmland heterogeneity is an important feature for biodiversity and while there are other action plans in this series devoted to woodland, wetlands, etc. it is important to recognise that these habitats are not exclusive of one another, and appropriate management of these habitats is also important to farmland birds and biodiversity at the landscape level.

All birds are protected, including their nests and eggs, with the exception of some species that can be controlled if causing serious damage to crops and livestock or presenting a threat to public health. These are:

- Hooded (Grey) Crow
- Magpie.
- Rook.
- Jackdaw.
- Wood Pigeon.

Malting barley

hitting the protein target

Richie Hackett,
Teagasc Crops Environment and
Land Use Programme, Oak Park

For the past few seasons, many growers have experienced protein levels in malting barley below the acceptable range of 9.5% to 11.5%. This can significantly affect the price so, in 2011, we began a research programme to identify management techniques to help growers consistently reach their protein targets.

The work consists of a series of plot experiments carried out at a number of sites in the main barley growing areas and a survey of commercial barley crops from around the country.

The aim of the survey is to identify factors affecting both yield and protein levels in commercial barley crops and so will benefit all spring barley growers. This article will focus on the information regarding protein coming from the survey.

The survey allows us to look at crops from all around the country which would not be possible if we were relying on research experiments alone.

As part of the survey, information is being collected from participating growers on aspects of the field history, such as the number of years the field has been in tillage and how often organic manures (slurries, farmyard manure, etc.) have been applied in the previous three seasons.

Crop data such as sowing date, variety and fertilizer inputs are also collected. At harvest, a sample of grain is taken and a yield estimate is made. While it is difficult to draw definite conclusions based on one year's data (2011), this work clearly indicated that protein was higher the more often organic manures had been applied in the past.

The survey also showed that the less time a field was in tillage (i.e. the closer to grass it was), the higher protein was likely to be. Surprisingly, it showed a relatively poor relationship between the amount of fertilizer N applied to the crop and protein content. This survey is continuing in 2012.

Key questions

The key questions addressed in the plot experiments include:

➔ Is there a difference between ap-

plying the first nitrogen at sowing or waiting until the crop emerges (tramlines just visible) to apply the first N? Regarding whether the first N should be applied at sowing or delayed until the crop emerges, there was no difference in yield between the two timings in 2011. However, protein was somewhat higher (0.2% to 0.4%) where the first N was applied at sowing as opposed to waiting until the crop emerged.

Whether or not this was due to the exceptionally dry March and April experienced in 2011, which may have led to less efficient use of the nitrogen applied to the soil surface after crop emergence, is unclear and further work will be required to confirm this.

➔ Does the amount of N applied in the first application affect yield or protein?

Past work with malting barley, carried out over a number of seasons and a number of sites, clearly indicated that as the proportion of the total N for the crop that was applied at sowing increased, there was a corresponding decrease in protein levels.

In 2011, similar work found a small decrease in protein as the amount of N applied in the first application increased from 30 to 60 to 90kg N out of a total application of 150kg N/ha (it didn't matter whether the first N was applied at sowing or after emergence).

Again, the very dry spring may have had an effect here, and in a more normal (wetter) spring, applying a lot of nitrogen early, before the crop really needs it, increases the risk of that N being lost from the soil, and hence it would be of no benefit to the crop.

➔ Should the main dose of N, normally applied in one dose at the beginning of tillering, be split into more than one application and, if so, for how long should the second part be delayed?

There was relatively little effect from keeping back some of the main split for application later in the season in 2011, but again this may have been a consequence of the dry weather. The only exception to this was where some nitrogen was kept back until very late in the season (when the crop had headed out) where protein was slightly increased (0.2% to 0.3% on average) but this increase came with a loss in yield at some sites.

Some past work by UCD indicated





Past work with malting barley clearly indicated that as the proportion of the total N for the crop that was applied at sowing increased, there was a corresponding decrease in protein levels.

that there was a benefit in protein when some of the main split was delayed until GS 30 to 31 (at around the time the first node can be detected on the main stem of the crop).

Advice

So what do we advise for 2012? For those growers who have not experienced protein problems with their malting barley over the past few seasons, the advice is to continue as before. For growers who have experienced problems:

➤ Nutrients (P and K) other than N should be applied, based on up to date soil test results. Whenever possible, organic manures should be incorporated into the fertilizer programme; as well as reducing the fertilizer bill, they have the potential to positively influence protein levels.

➤ Keep the amount of N applied in the first application down. You should aim keep the amount of N applied in the first application to less than 50kg N/ha, irrespective of whether it is applied at sowing or immediately after emergence of the crop. This is particularly important for early sown (early to mid-March) crops. It is less of an issue for later sown crops.

➤ The main application should be split. The first part should be applied at early tillering and should comprise 60% to 70% of the main split dose. The second part should be applied two to three weeks later at around GS 30 to 31.

➤ While delaying some N until very late in the season (at heading) gave a small increase in protein in 2011, more research is required before a definite recommendation can be given on this.



Keep the amount of N applied in the first application down. You should aim keep the amount of N applied in the first application to less than 50kg N/ha, irrespective of whether it is applied at sowing or immediately after emergence of the crop

Reaping the rewards of

Patrick Conaghan

Teagasc, Animal and Grassland Research and Innovation Centre, Oak Park, Carlow

Reseeding can deliver a 15% to 20% increase in forage yield and up to 8% increase in animal output per hectare. On top of that, there are potential savings in fertilizer costs. A good sward with a high content of white clover can fix between 100 kg and 150 kg N per ha (equivalent to between seven and 11 bags of CAN per ha). To maximise the benefit from reseeding, choosing the most appropriate varieties is vital. Reseeded swards should last for 10 years, or longer. Therefore, the varieties sown today will directly influence the farming system and profitability over the coming decade. What you sow today, you reap tomorrow.

Species

For long term (more than five years) grazing and silage swards, the optimum grass and clover species are perennial ryegrass and white clover. Under high stocking rates (greater than 2.2 LU per ha) with high application rates of fertilizer nitrogen (over 100kg N per ha) the seed mix should consist solely of perennial ryegrass.

Under low stocking rates (less than 2.2 LU per ha) with low to moderate application rates of fertilizer nitrogen (less than 100 kg N per ha), a mixture of perennial ryegrass and white clover varieties should be sown. The white clover will complement the perennial ryegrass through its ability



to fix atmospheric nitrogen and its high nutritive value.

Varieties

Each year, the Department of Agriculture, Food and the Marine releases a recommended list of grass and clover varieties for use in Ireland. The list identifies the elite varieties that have a proven record of high perfor-

mance in Ireland. Approximately 85% of varieties tested fail to meet the required standards.

To sow a variety without a proven record in Ireland is a huge risk, so all of the varieties included in your seed mix should be on the recommended list. The performance of a seed mix directly reflects the performance of the varieties included in it, so a substandard variety in the mix will reduce the overall sward performance in direct proportion to its inclusion rate.

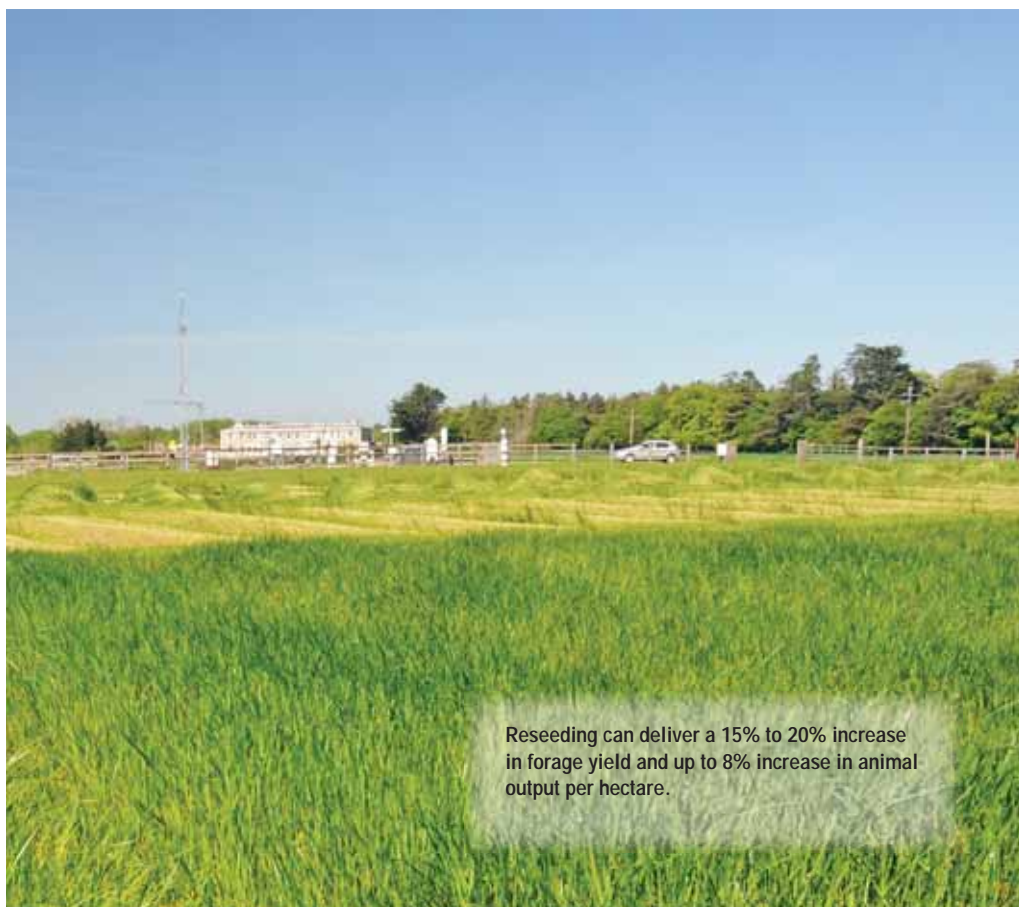
Table 1: Recommended white clover varieties (DAFM 2012 recommended list of grass and clover varieties)

Variety Name	Total yield	Leaf size*	Avg clover %	Year first listed	Breeder	Origin
Control mean t DM/ha	9.1					
Aran	98	VL (1.00)	44	1983	Teagasc	IRL
Barblanca	103	L (0.80)	50	2009	Barenbrug	NL
Alice	103	L (0.75)	48	1995	Barenbrug	NL
Chieftain	102	M (0.66)	41	2005	Teagasc	IRL
Avoca	102	M (0.58)	46	1995	Teagasc	IRL
AberHerald	97	M (0.56)	43	2003	IBERS	UK
Crusader	94	M (0.53)	43	2009	Barenbrug	NL

Key traits

The perfect variety would provide sufficient yield to match the animal feed demand curve over the entire season. Therefore, high spring and autumn yield from a variety is crucial as these are the main periods when forage supply is less than animal demand. High digestibility is also important. In addition, a variety that produces a dense sward with no bare ground and that will persist indefinitely is desirable.

regular reseeding



Reseeding can deliver a 15% to 20% increase in forage yield and up to 8% increase in animal output per hectare.

Perennial ryegrass swards

- The seed mix should contain three to four varieties. No single variety excels in all characteristics. Choose varieties that complement each other. Each variety should contribute at least 20% (by weight) of the seed in the mix.
- Tetraploid seed should comprise 30% to 40% of the total seed sown.
- Varieties in a mix should have a compact spread in heading dates.
- For two-cut silage systems without spring grazing, choose intermediate heading varieties.
- For all grazing systems, choose late heading varieties that offer high spring and autumn yields.
- For mixed silage-grazing systems (spring grazing followed by a silage crop and further grazing), choose late heading varieties that offer high spring and autumn grazing yields, and high first cut silage yields.
- If direct reseeding, sow 27 kg to 30 kg of perennial ryegrass seed/ha.
- Only sow proven varieties as listed on the 2012 Recommended List of Grass and Clover Varieties.

Table 2: Recommended early and intermediate perennial ryegrass 2012 (DAFM 2012 recommended list of grass and clover varieties)

Variety name	Group	Ploidy	Heading date	Total yield	Ground cover (1-9)	Spring growth	Autumn growth	DMD %	WSC %	Year first listed	Breeder	Origin
Early PRG Control Mean t DM/ha				14.8	6.0	1.3	3.1	80.4	18.4			
Moyola	Early	D	11-May	105	6.4	109	107	100.0	102	2012	AFBI	NI
Genesis	Early	D	13-May	103	6.7	118	102	99.7	103	2012	Teagasc	IRL
Inter PRG Control Mean t DM/ha				15.1	6.7	1.1	3.1	81.5	18.7			
Shandon	Inter	D	21-May	97	6.9	98	96	98.8	97	2005	Teagasc	IRL
Solomon	Inter	D	22-May	101	7.0	119	103	99.8	96	2011	Teagasc	IRL
Premium	Inter	D	23-May	97	7.1	90	99	99.7	97	1997	Innoseeds	NL
AberStar	Inter	D	29-May	99	7.0	90	107	101.1	105	2008	IBERS	UK
AberMagic	Inter	D	01-Jun	101	7.2	91	116	102.1	125	2010	IBERS	UK
Giant (T)	Inter	T	19-May	102	7.0	111	102	100.3	106	2011	Teagasc	IRL
Malone (T)	Inter	T	19-May	104	6.2	109	106	100.9	110	2009	AFBI	NI
Magician (T)	Inter	T	21-May	102	6.5	109	102	100.8	102	1999	Teagasc	IRL
Trend (T)	Inter	T	23-May	104	6.3	102	103	101.0	104	2007	NPZ	DE
Carraig (T)	Inter	T	24-May	103	7.0	114	105	101.1	108	2012	Teagasc	IRL
Edda (T)	Inter	T	25-May	101	6.0	99	101	101.1	103	2003	NPZ	DE
Lismore (T)	Inter	T	25-May	98	6.4	87	97	100.5	100	2006	Euro Grass	DE
Dunluce (T)	Inter	T	29-May	104	6.4	99	110	102.8	118	2007	AFBI	NI

Table 3: Recommended late perennial ryegrass 2012 (DAFM 2012 recommended list of grass and clover varieties)

Variety Name	Group	Ploidy	Heading date	Total yield	Ground cover (1-9)	Spring growth	Autumn growth	DMD %	WSC %	Year first listed	Breeder	Origin
Late PRG Control Mean t DM/ha				14.6	6.78	1.0	3.1	82.1	18.5			
Stefani	Late	D	31-May	99	7.1	96	100	99.9	98	2012	DLF	DK
Majestic	Late	D	01-Jun	99	7.1	98	105	98.9	93	2012	Teagasc	IRL
Denver	Late	D	02-Jun	98	7.2	86	98	99.6	91	2003	Advanta	NL
Glenveagh	Late	D	02-Jun	100	7.7	83	103	99.7	102	2012	Teagasc	IRL
Piccadilly	Late	D	02-Jun	101	7.2	94	101	98.9	93	2012	Euro Grass	DE
Soriento	Late	D	02-Jun	97	7.4	84	97	99.7	95	2005	Euro Grass	DE
Tyrella	Late	D	03-Jun	97	6.9	121	99	100.2	106	2008	AFBI	NI
Portstewart	Late	D	04-Jun	98	7.0	84	102	100.3	103	1994	AFBI	NI
Mezquita	Late	D	06-Jun	97	7.6	92	99	99.3	94	2008	Euro Grass	DE
Drumbo	Late	D	07-Jun	99	7.0	101	105	101.0	112	2011	AFBI	NI
Twystar	Late	D	08-Jun	97	7.4	92	102	99.3	100	1998	CPB Twyford	UK
AberChoice	Late	D	09-Jun	102	7.1	92	107	102.0	128	2012	IBERS	UK
Malambo	Late	D	09-Jun	99	7.1	87	105	99.1	95	2010	Euro Grass	DE
Cancan	Late	D	10-Jun	97	7.3	78	107	99.9	106	2000	Limagrain	F
Orion (T)	Late	T	31-May	100	6.5	84	99	101.4	112	2002	NPZ	DE
Delphin (T)	Late	T	01-Jun	104	6.3	104	104	100.9	106	2002	NPZ	DE
Glencar (T)	Late	T	01-Jun	102	6.3	102	101	100.0	101	2005	Teagasc	IRL
AberCraigs (T)	Late	T	05-Jun	102	6.4	99	102	101.0	110	1999	IBERS	UK
Navan (T)	Late	T	05-Jun	103	6.5	86	113	101.0	112	1999	AFBI	NI
Kintyre (T)	Late	T	06-Jun	105	6.4	99	113	101.4	110	2012	Teagasc	IRL
Twymax (T)	Late	T	06-Jun	102	6.7	84	102	101.2	113	2007	CPB Twyford	UK

Mixed grass-clover swards

- The seed mix should contain two to three white clover varieties and three to four perennial ryegrass varieties.
- Half of the white clover seed in the mix should consist of varieties of medium leaf size.
- The other half of the white clover seed in the mix should consist of varieties of small, medium or large leaf size depending on the intended sward use: if the sward is to be used

for intensive sheep grazing include small leaf size varieties, if the aim is cattle grazing include medium leaf size varieties and if planning mainly silage production include large leaf size varieties.

- The companion perennial ryegrass varieties should be carefully selected to encourage clover growth and development. Choose open, less aggressive perennial ryegrass cultivars following the recommendations above for two-cut silage, all grazing and mixed silage-grazing systems.
- If direct reseeding, sow 25 kg of perennial ryegrass seed with 4 kg to 5 kg of white clover seed per hectare.

New Teagasc varieties

Five new Teagasc bred perennial ryegrass varieties have been added to the DAFM Grass and Clover Recommended List Varieties for Ireland for 2012. The varieties have been shown to offer improved yield, quality and persistence characteristics for grass-based production systems in Ireland.

The new perennial ryegrass varieties are:

- **Genesis (early diploid)** has the

highest spring yield of all perennial ryegrass varieties on the Recommended List (RL).

- **Carraig (intermediate tetraploid)**, has the highest spring yield and ground cover of all intermediate tetraploid varieties on the RL.

➤ **Majestic (late diploid)** combines high all round performance in yield and ground cover.

➤ **Glenveagh (late diploid)** has the highest ground cover of all perennial ryegrass varieties on the RL.

➤ **Kintyre (late tetraploid)** has the highest annual yield, and joint highest autumn yield and digestibility of all late heading varieties on the RL.

In 2012, farmers can choose among 10 perennial ryegrass and three white clover varieties bred by Teagasc for reseeding.

All varieties are included on the DAFM Grass and Clover Recommended List Varieties for Ireland for 2012.

The Teagasc forage breeding programme continues to develop improved varieties of grass and clover. A number of other new varieties are currently undergoing seed increase for future release.

“ Five new Teagasc bred perennial ryegrass varieties have been added to the DAFM Grass and Clover Recommended List Varieties for Ireland for 2012

The most important paperwork of all

The Single Payment Scheme (SPS) application is the single most important document you will fill out this year



James McDonnell
Farm Management Specialist
Teagasc Rural Economy and Development Programme

The Single Farm Payment has been with us since 2005, so you would think that we would get used to it. There always seems to be changes to it, however, and as it makes up such a large proportion of farmers' incomes, we must ensure that it gets the attention that it deserves. This article will outline some of the main points of this year's application process.

Key dates

The online application system is available to farmers and their advisers from 17 February. Pre-printed paper forms should be with farmers in mid-March. The closing date is 15 May 2012; there cannot be any extension to this date.

Start early

If you normally get help filling the form at your local Teagasc office, it is important that you make contact with the office promptly.

There have been many changes in the advisory staff over the last year and it may be the case that you have a new adviser.

For security reasons, you will have signed a form that allowed your original adviser to deal with your application. It may now be necessary for you to sign a new form to authorise Teagasc to complete the application on line.

If you receive this authorisation form from Teagasc, it is important that you complete it and return it to the local Teagasc office as it will take a little time for the form to be processed before your adviser can get access to your on line information.

The basic requirements of the 2012 SPS are similar to other years.

You still need one eligible hectare to claim one entitlement. You must declare all the land that you are farming. The 2012 SPS application also covers 15 other schemes; for example: the Grassland Sheep Scheme, the Dairy Efficiency Programme and, this year, the new Beef Technology Adoption Programme.

General changes to the 2012 scheme

Modulation on 2012 payments will be 10% on payments over €5,000; this is an increase of 1% on the 2011 figure. An additional 4% of modulation is applied to payments in excess of €300,000.

To claim the direct payment under the 2012 SPS, all of the hectares of land declared by you to support your claim (owned, rented-in and leased-in) must be subject to an agricultural activity by you for a period:

- ➔ From the beginning of the year until after 31 May 2012 or
- ➔ For a period before 31 May 2012 to 31 December 2012.
- ➔ Land that is declared by an applicant on the basis that it is available to him or her for one day, **31 May only**, on foot of an agreement with another party will not be eligible for payment.
- ➔ For Disadvantaged Area Payments (DAS), you must have the land for the entire year, or under a normal co-tenure agreement.

There is a new requirement if you are an AEOS participant. You must outline on the back of the form which parcels are participating in the AEOS Scheme by placing a tick in a box. Any

“ Pre-printed paper forms should be with farmers in mid-March. The closing date is 15 May 2012; there cannot be any extension to this date

parcel with either a linear or area based measure must have the relevant box ticked.

Land without a parcel number

If you wish to declare a land parcel that does not have an existing Land Parcel Identification (LPIS) number, or has not been claimed for several years, you will be required in due course to submit evidence (land registry folio, and/or lease/rental agreement) which confirms you are entitled to use the parcel in question.

At this stage, you should have received new maps showing the land parcels declared in the 2011 application.

It is vital to review these maps. If there is an ineligible area included in the parcel, that has not already been 'red lined', then you must submit an amended map to take this out. This may be the site of a house or a farm building or roadway.

There may be red lines delineating these structures on the maps you will receive. These red line areas need to be checked and maps adjusted as necessary.

This year, there will be three ways to submit a map.

- ➔ By post.
- ➔ Uploading an electronic PDF file (map) on the SPS online system.
- ➔ On the Department's SPS online mapping system

The SPS online system the Department of Agriculture use for the processing of SFP applications has a new feature in 2012. It will be possible to complete and save the maps online as part of the application from mid-March. This new system should speed up the processing of map digitisation, so where there are map changes, the entire application process can now be completed online.

Consolidation

The rules for consolidation have not changed for this year.

[Continues next page >>](#)



Farmer Name:
Herd Number:
Scheme Year:

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You can consolidate your entitlements down to all of your owned land and at least 50% of the area that you farmed in the reference years if you:

- ➔ Have lost land that you had rented or leased in the reference years.
- ➔ Have lost land due to a compulsory purchase order.

You can not consolidate because of planting grant-aided forestry for the years 2009 onwards as land that was planted in these years can be counted as an eligible crop to draw down entitlements in its own right provided:

- ➔ The parcel was declared in 2008 by a recipient of 2008 SPS.
- ➔ The applicant must retain 10% of the lands declared in 2008 in an agricultural activity with a minimum of 3ha of farming activity

➔ The SPS applicant must also be drawing down the forestry payment

Disadvantaged Areas Scheme (DAS)

The 2012 SFP form is also used to apply for the DAS 2012 scheme.

Unfortunately, the terms and conditions of the scheme have not been finalised at the time of going to press as the Department of Agriculture, Food and the Marine are waiting for approval in Brussels for changes to the scheme.

The following comments relate to the current DAS proposal as it stands when going to press – check for updates as this may change when the final rules are published.

The current proposal is that 2011 is set as a reference year for DAS. In that

year, you must have had a stocking rate of 0.3LU/ha for three months. If you did not have this stocking rate in 2011, then you are not eligible for the 2012 DAS scheme. But, there may be special circumstances why this stocking rate was not achieved.

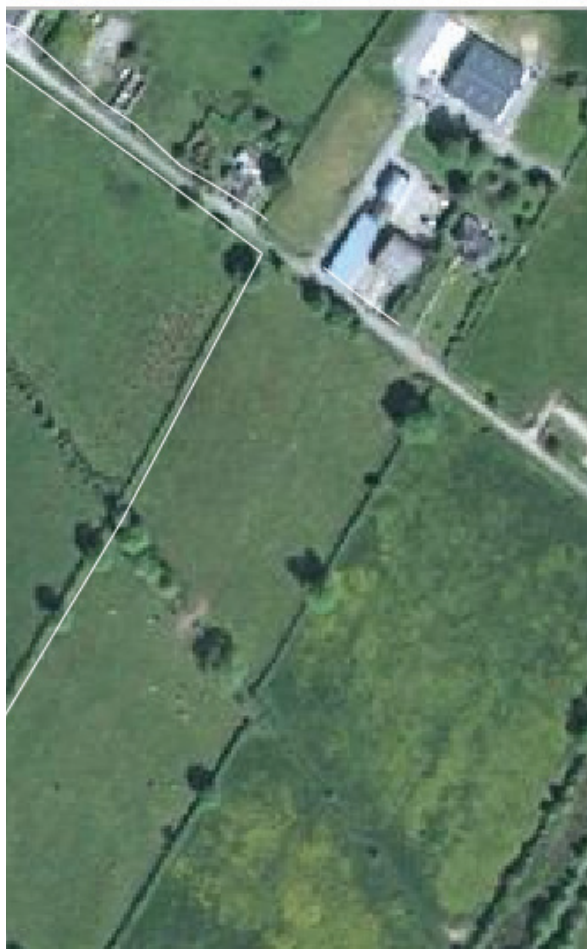
These may include stocking rate restrictions due to the requirement to comply with an environmental scheme. In 2012, you must have a minimum stocking rate of 0.15LU/ha for a continuous six months.

Additionally, you must have an average stocking rate of 0.15LU for the full year.

There is a proposed change in the rules with regard to the eligibility of mature non breeding horses being counted for stocking rate purposes.

Name: Joe
 Surname: Bloggs
 Address Number: G215XXXX
 Year: 2012

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Parcel Information

Parcel ID: G21514XXX
Gross Area: 2.58
Reference Area: 2.5

Tool Tips

Point the cursor over an icon to see what that tool does.

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 **REMEMBER**

Usage of entitlements

Each entitlement must be used once in every two-year period. Otherwise, any unused entitlements will be lost to the National Reserve. This is particularly important if you have leased out entitlements. These need to be used by the person who is leasing your land. Check the date that the transfer period runs to. This transfer document may need to be completed again this year and, remember, that you can only lease out an entitlement with one hectare of eligible ground.

If you have entitlements of different values you need to check that they are

all being claimed once every two years. The Department will automatically pay higher value entitlements first and the lower value entitlements may not be rotated. If this is the case, they will get lost to the National Reserve. Use the payment order form to select the lower value entitlements for payment first. This will keep the entitlements active but will result in a lower SPS cheque for 2012. Alternatively, you may choose to sell these entitlements if you do not have enough land to claim them. When you are reviewing your will, make sure that the entitlements are mentioned. If not, then they are included in the 'residue' of the will and may not go to the person who you had intended to get them. They do not automatically go with the land.

If this is the first time for your advi-

sor to deal with your SPS application, allow extra time to get the job done. It is important that you bring in the most recent maps for all of your land and any land that you may be renting. These maps must be examined carefully; any ineligible areas excluded and amended maps returned to the Single Payment Unit. It would also be important to bring in a copy of last years application and previous applications, if they are available.

You should contact your adviser early and keep your appointment so that the job can be done in an organised fashion. Finally, remember to post the form if you are completing it on paper and keep your swift post receipt in a safe place and, if via the online system, make sure that it is fully submitted before the closing date.

Survey shows need for greater farm management training

Alan Dillon reports on a survey of 108 Teagasc dairy farmer clients. He conducted the survey to establish current financial management practices and the need for business planning/financial management tools for farmers in the future

Good financial management practices are vital to the profitable running of the family farm. From the research conducted to date, it is clear that there is a need for greater emphasis on business planning and financial management on farms in Ireland. The large variances in the costs of production and farm profitability to be found in the National Farm Survey support this conclusion, with net margins on milk production ranging from 12.9 cent per litre on low cost farms to 1.6 cent per litre on high cost farms (a difference of €28,000 on a 250,000-litre farm).

Profit Monitor

In 2010, 2,099 Teagasc Profit Monitors were completed. This rose to 2,937 last year and from 1 January to 22 February this year, 2,000 have already been completed. There has been a lot of work completed on the ground by advisers to achieve this growth. This will be augmented by the DEP scheme introduced last year and the BTAP scheme this year, where it is a requirement to complete a Profit Monitor.

While there will be a major increase in numbers with the assistance of

these schemes, it underlines the importance of external incentives to get farmers to engage in detailed financial analysis of their business.

The emphasis on agricultural research and advisory in the past has leaned more towards the technical aspects of agricultural production rather than the business planning side of the farm. The majority of farmers state their desire to plan and manage their farms in a businesslike way but some are unaccustomed to completing financial management analysis.

This shows the need for a more basic entry level business planning tool. Such a tool could provide an intermediate step between the limited financial management that occurs on many farms and the more advanced Teagasc financial management tools.

Accounts

Farmers surveyed as part of the research stated how important the annual accounts are for their farm financial management and emphasised how comfortable they are with the format in which the annual accounts are laid out. Therefore, the annual accounts format could form the basis of any new entry level business planning tool that is to be developed.

The introduction and use of any business planning tools needs to be supported by training and mentoring, as is the case in the UK, Canada and Australia where there is as much emphasis on the business planning/financial management side of farming as there is on the technical side.

The industrial agencies in Ireland are very proactive in training and mentoring for even very small businesses in the area of business



planning and financial management. Farmers surveyed have shown their interest in participating in such training with over 95% of those surveyed expressing their interest in financial training.

Achieving the Harvest 2020 targets will require significant expansion and improvements in profitability at farm level. It is essential, therefore, that all farmers treat their farms as businesses, conduct the proper financial analysis and are trained appropriately in doing so.

Farm business planning and financial management is an essential tool to show a farmer where he is headed. As Lewis Carroll famously said "If you don't know where you are going, any road will take you there."

➔ Alan Dillon is carrying out a Research Masters under the supervision of Dr James Breen of UCD and Fintan Phelan, Financial Management Specialist, Teagasc



Of the farmers surveyed, 64% were in a dairy discussion group, with 32% of group members only joining recently as part of the Dairy Efficiency Programme.

What the survey said

- ➔ Of the farmers surveyed, 64% were in a dairy discussion group, with 32% of group members only joining recently as part of the Dairy Efficiency Programme.
- ➔ The level of completion of the three main Teagasc Financial Planning tools showed that prior to the survey (completed in autumn 2011), 39% of dairy farmers surveyed had completed a Profit Monitor, 15% had completed a cost control planner and 6% had completed a farm business plan for their farm. These numbers indicate the relatively low uptake in business planning/financial management among even progressive and forward thinking farmers. DEP participants must complete a Profit Monitor for 2011 as part of their membership.
- ➔ Asked about the importance of annual accounts to their farm business, 64% of the farmers said they considered them highly important with 25% considering the accounts moderately important.
- ➔ Only 34% of farmers prepare an annual cash flow for their farm and only 23% break down the profitability of dif-

ferent enterprises on their farm (i.e. dairy and beef).

- ➔ The average net profit of farms surveyed was €56,472, with a range from an average of €28,788 on under 50-cow herds to an average of €147,143 on 121 cow plus herds.

Understanding

- ➔ When asked about their current understanding of farm financial management, 38% of farmers rated themselves as having a low understanding of farm financial management while the majority of farms (56%) rated themselves as having a moderate level of understanding.
- ➔ 78% of farmers surveyed stated they would be interested in attending business planning/financial management courses. Of those farmers interested in financial training, 41% would prefer to be trained by an adviser in a small group of three to five farmers, while 32% of those interested in training preferred a classroom situation with a larger group.
- ➔ Over 53% of dairy farmers surveyed

expressed an interest in expanding over the next five years, with 89% of these expanding farmers intent on increasing cow numbers at an average forecast investment of €56,000 per farm. The planned expansion was largest in under 35 year old farmers with an anticipated investment spend of over €70,000 per farm, on average.

- ➔ In financing this investment, 44% intend to use a farm loan only, 23% intend to use farm cash flow only and 33% planned to use a mixture of cash flow and a farm loan.
- ➔ When questioned about their interest in business planning, 95% of farmers stated they would follow a business plan; 21% have had to restructure loans in the last three years due to cash shortages.
- ➔ Over 92% of farmers have a computer at home but only 29% use it for analysing the financial side of their business.
- ➔ The biggest issues facing the farmers surveyed over the next five years were milk quota access, milking platform size and milk price volatility.

Forest sideline — mushrooms

Wild forest mushrooms can generate a healthy second income stream from thinnings and living tree stumps



Michael Sommers
Forestry
Specialist,
Teagasc Crops,
Environment
and Land Use
Programme

There is an old saying “You can’t grow two crops in the one field”. John O’Connell from Kilmacnab, Co Limerick, is not afraid to challenge this old saw. His seven hectares of ash, oak, beech and sycamore make up one of the finest broadleaf woodlands in the country. Planted in 1996, it has won the coveted RDS forestry award twice. John is gaining further recognition as one of the pioneers behind edible forest fungi in Ireland.

Because Ireland lacks a forest tradition, people tend to be highly suspicious of any mushroom other than the common cultivated type. However, edible forest fungi are one of the biggest non-wood income streams from woodland on continental Europe. France, Italy and Germany, in particular, prize high quality fungi such as the black truffle.

In Ireland, approximately €600,000 worth of fresh or chilled wild mushrooms and €800,000 worth of frozen wild mushrooms are imported annually.

Where did the interest come from?

John started thinning his woodland seven years ago. At the time, firewood was the only product from early thinning. Soon after that, his daughter, visiting from London, brought him a present of an oak tree inoculated with fungal spores. This got him interested and he quickly started reading up on the idea. He found that cut logs could be inoculated with birch pegs containing the fungus.

John set out to source these pegs. Eventually, he found a supplier in Britain. He soon set up his own trials and is now harvesting oyster and shiitake mushrooms from his forest thinnings.

The process

The initial process is very labour intensive. John uses two different methods to produce mushrooms. Trees are cut in the dormant season when the sugar levels are at their maximum. Once cut, the logs are cut into 1m lengths and the inoculant added. This is done by drilling a hole with an 8mm drill bit every six inches to a depth of 2.5 inches.

Each inoculated peg is tapped into the log and sealed with bees wax. This prevents harmful spores colonizing the logs. The inoculated logs are then carefully stacked in piles under the canopy to protect them from exposure to wind or sunlight.

John is also inoculating tree stumps. Instead of cutting the tree at the base, it is cut at 1m above ground. The same process of drilling and inserting the inoculant peg follows. Mushrooms grow on the still-living stump.

Logs, where used, must be watered regularly in dry conditions to stop them drying out.

John stresses the importance of using spring water. Using municipal treated water on logs will have an adverse effect on the mycelium (the basic building block of the fungus). He recently put in place an irrigation system which waters his logs in dry conditions.

Time

It can take between six and eight months for the oyster inoculants to develop fungi spores, which then colonise the log. It can take shiitake spores between 12 and 18 months to produce mushrooms. Once a log is inoculated, it will produce fungi for five years. At the end of the process, the logs can be still used for firewood.

Each log can produce 5% of its own weight in mushrooms. Once logs are producing, mushrooms can be produced all year round. There are no chemicals added at any stage of the process.

Benefits

John stresses the health benefits of shiitake mushrooms. They are one of



the best non-animal sources of iron. Both oyster and shiitake mushrooms are used to fight the development and progression of cancer by boosting the body’s immune system.

Recent studies show that both species have been used to help prevent heart disease by lowering cholesterol levels.

They are thought to help treat infections, such as hepatitis by producing interferon, a group of natural proteins that help prevent viruses from multiplying.

Truffles

Truffles are the most famous forest fungi. John began experimenting with truffles three years ago following a visit from the New Zealand mycologist (mushroom expert) Dr Ian Hall. He felt that the Kilmacnab site was ideal for truffle production. John started under planting his oak with hazel and oak.

These trees had summer truffle inoculants added. It takes around 10 years from planting to harvest but, John feels it will be worth the wait.



John O'Connell with baskets of shiitake and Oyster Mushrooms.



Shiitake on logs.



Oyster mushrooms on a tree stump and (below) on logs.



Family friend Andrew assesses shiitakes.



Ongoing work

John is part of a group looking at other edible forest fungi in the 26 counties, led by Dr Tom Harrington from the University of Limerick. The group has found that the best woodland for this is oak, sycamore and beech. Ash and alder are not suitable because of their moisture content.

He is preparing a course on wild forest fungi. "Wild fungi can be both delicious and deadly poisonous. There is no simple way of saying what is edible and what is poisonous. The course is outlined to separate both. For example, chanterelles are one of the most common (and delicious) edible mushrooms in woodland, but the aptly named Destroying Angel, the Death Cap and the Beechwood Sickener should be avoided at all cost.

John O'Connell's plantation is an excellent example of the how both timber and non-timber products can benefit our lives. A key lesson is that effort pays. Broadleaves need care; fungi too. If they get it, they can pay us back many times over, he concludes.



Wild fungi can be both delicious and deadly poisonous. There is no simple way of saying what is edible and what is poisonous



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Botanic Gardens

Plant handling tips

Take great care when planting young trees

Dorothy Hayden, Teagasc Education Programme, Botanic Gardens

There are numerous tree planting opportunities on most Irish farms, such as boundaries, odd corners, shelter belts, hedgerow establishment/improvements, specimen trees in fields, woodland establishment and, of course, avenues and gardens.

You will have taken time to select the appropriate trees for your planting location, and prepared the site or planting pit correctly, so why spoil it all by sloppy plant handling?

No matter where you decide to plant trees, the principles of plant handling remain the same. Care taken at establishment will help ensure healthy growth and minimal losses, thereby reducing the possibility of replacement planting next season.

Transplanted trees require very careful handling and protection at all stages - from initial lifting in the nursery, through temporary storage, and transport to the planting destination. Remember that the whole plant, including the root system, is vulnerable.

It is often not realised that the bark of a tree is relatively fragile and can



Tree stake damage.



Students observing good nursery skills on a recent trip to Coillte's nurseries in Clone, and Mucklagh Nurseries, Co Wicklow.

be damaged by careless use of tools or rough handling.

Where tree ties are used in conjunction with stakes for larger trees, it is important that they are not secured too tightly and loosened when the tree trunk expands as it grows. In most instances, stakes and ties should be removed entirely after approximately 18 months.

Roots are easily broken and damaged when bundles of plants are dropped or thrown from transport vehicles. This may not be apparent immediately, but, just like damaged bark, torn or crushed roots can provide an entry point for disease.

Where bare rooted plants have to be stored for a period of time, for example, awaiting good planting conditions, heel the plant into soil/moist compost/sand, being careful not to bury above the nursery soil mark on the stems.

Exclude any air pockets in the chosen medium, and protect the plants from hares and rabbits. Where storage is only required for a few days, store plants in their nursery bags, (tied at the top) in a sheltered position, away from sun and drying winds, frost, rodents and grazing animals.

One of the commonest errors of all in relation to lifting and planting is where the roots of plants are inadvertently allowed to dry out. It is vitally important that once lifted from the soil, the root system is covered to prevent desiccation in the field and en route to the planting destination. This is especially important on days with

good drying winds.

When planting, keep plants in large plastic bag until you are ready to place them in the planting hole, and never lay the plants out in advance when planting. Drying happens within minutes and when combined with a dry spell, can make establishment very difficult. It is usually not practical to water large scale plantings of small trees. Therefore, adequate attention given to moisture conservation is vital for success. Consider applying an organic mulch to further aid moisture retention. Happy planting.

Further advice on planting trees in Ireland can be obtained in the recent Tree Council of Ireland publication *Amenity Tree and Woodlands- A Guide to their Management in Ireland 2010* editor Kevin Collins.



It is vitally important that once lifted from the soil, the root system is covered to prevent desiccation in the field and en route to the planting destination. This is especially important on days with good drying winds.

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