Opportunities in horticulture.

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FBD is going on tour

FBD was founded for farmers by farmers and this year, as part of our strong commitment to the farming community, we’re going on tour.

So, keep an eye out for the FBD Tour Bus at the National Ploughing Championships in Athy, Co. Kildare from September 20th to 22nd.

You can pop in for a chat about your individual farming insurance needs with a member of our friendly staff.

With over 40 years experience insuring Irish farmers, they’re sure to have a package to suit you, at a great price.

FBD Insurance plc is regulated by the Central Bank of Ireland.


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**Introducing the Teagasc Dairy Manual**

Mark Moore
Editor, Today’s Farm

At the Teagasc Dairy conferences on 15 November at the Rochestown Park Hotel, Cork, and on 16 November at the Hodson Bay Hotel, Athlone (see coming events for further details), Teagasc will launch the Teagasc Dairy Manual.

The manual is a comprehensive source of state-of-the-art information on dairying for existing and potential dairy farmers. Usually, Teagasc publications focus strongly on one aspect of a farm - production, say, or farm business management.

The Teagasc Dairy Manual is different, addressing the full range of challenges faced by existing and potential dairy farmers in one publication.

The manual is not aimed exclusively at farmers currently milking cows. Anyone who has any thoughts of entering or re-entering dairying once quotas are abolished in 2015 will find it a valuable source of material on all aspects of establishing and running a dairy business.

The first chance to get hold of a copy will be at the dairy conferences, see the article on page 14 on how to purchase a copy subsequently.

---

**Upcoming events**

- **Dairy**
  - Winter milk systems
  - Tackling feed costs
  - Managing drying off
  - The Teagasc Dairy Manual

- **Drystock**
  - Body condition key for sucklers
  - Finishing lambs from November to March

- **Equine**
  - Pre-winter checks

- **Soils**
  - Farming on soggy ground

- **Tillage**
  - CPT as important as CAP

- **Environment**
  - 10 tips on cross compliance

- **Farm safety**
  - Preventing the anguish

- **Botanic Gardens**
  - Opportunities in horticulture

- **Forestry**
  - Fire up your forest fuel

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**Cover caption |** Planting bulbs at the Botanic Gardens, Dublin. See Opportunities in horticulture, page 34.
upcoming events

**CATTLE WINTER SEMINARS**

A nationwide series of 20 Teagasc cattle seminars, organised by Business and Technology beef advisers will take place during November and December.

A range of detailed technical, nutritional and financial topics will be covered including: animal health and veterinary issues, nutrition and feeding management, markets and outlook, systems and budgets. Speakers include Teagasc researchers, specialists, advisers and representatives of other organisations.

**CROSS COMPLIANCE MEETINGS**

All farmers are invited to attend a cross compliance meeting in their local area during the month of November. These free information meetings (30 in total) will cover topics such as:

<table>
<thead>
<tr>
<th>Table 1: Cattle winter seminars</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Date</strong></td>
</tr>
<tr>
<td>8 November</td>
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<tr>
<td>10 November</td>
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<td>29 November</td>
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<td>29 November</td>
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<tr>
<td>1 December</td>
</tr>
</tbody>
</table>
What happens during an inspection? Nitrates, cattle, sheep, pesticide, and single farm payment inspection advice; What records need to be kept and how to keep them and the new land drainage and reclamation regulations. At these meetings, Teagasc advisers will show farmers what they can do on their farm to reduce the risk of a penalty on their Single Farm Payment, DAS, REPS and AEOS payments. See the Teagasc website for local details.

NATIONAL EQUINE CONFERENCE
15 November 2011, Moorepark
The Teagasc equine conference will take place in Moorepark, Fermoy on 15 November. Speakers will include: Alison Corbally, Horse Sport Ireland; Edward Doyle, breeder; international rider; Oliver Townend, international event rider; Wybe lede van de Lageweg, VDL Stud, Holland; Robert Splaine, Team Ireland show jumping manager and Teagasc equine advisers, Wendy Conlon, Norman Storey, and Declan McArdle.

NATIONAL DAIRY CONFERENCE & LAUNCH OF TEAGASC DAIRY MANUAL
15 & 16 November, Rochestown Park Hotel, Cork & Hodson Bay Hotel, Athlone
Dairy farmers are already gearing up for significant expansion as the end of the EU milk quota regime approaches. This year’s Teagasc National Dairy Conferences reflect this change with the theme for the events “The Irish Dairy Industry: To 2015 and Beyond”.

The conferences are taking place on Tuesday, 15 November in the Rochestown Park Hotel, Cork and in the Hodson Bay Hotel, Athlone on Wednesday, 16 November. The conferences aim to assist farmers manage the transition to the abolition of quotas.

The Teagasc Dairy Manual, a new Teagasc publication produced by Mark Moore, will be launched at the conferences. The Teagasc Dairy Manual contains sections on all the main dairy issues including breeding, feeding including grassland management, dairy facilities, animal health, dairy business management, soil fertility and nutrient management, optimising milk quality and project management for expansion. The emphasis is on sustainable, profitable milk production which will generate better incomes for dairy farmers.

ORGANIC COURSES
Nationwide
Teagasc will host a series of FETAC accredited organic courses in November. There is a financial management course for organic farmers which will be held on Friday, 11 November in the Teagasc office in Tullamore and will run over five consecutive weeks. The

National Dairy Conference
‘The Irish Dairy Industry: To 2015 and Beyond’
Teagasc invites all dairy farmers and those involved in the dairy industry to the National Dairy Conferences
Topics covered will include:
- The Future Outlook
- Expansion: The Importance of Planning and Cash Flow
- Technologies for Profitable Dairying
- Business Operating Models for the Future

TUESDAY, 15 NOVEMBER WEDNESDAY, 16 NOVEMBER
Rochestown Park Hotel, Cork Hodson Bay Hotel, Athlone
Conference fee
Clients: €60
Non-clients: €120
To Register and Pre Pay Contact:
Cork Conference: catriona.twohig@teagasc.ie  Tel: 022-21936
Athlone Conference: finola.finn@teagasc.ie  Tel: 090-626166
(Credit Card and Laser Accepted)
See conference programme on www.teagasc.ie/events
upcoming events

Table 2: Organic courses

<table>
<thead>
<tr>
<th>Date</th>
<th>Location</th>
<th>Course leader</th>
</tr>
</thead>
<tbody>
<tr>
<td>15 Nov</td>
<td>Oak Park</td>
<td>James McDonnell</td>
</tr>
<tr>
<td>15 Nov</td>
<td>Kilmallock</td>
<td>Pat Barry</td>
</tr>
<tr>
<td>16 Nov</td>
<td>Tullamore</td>
<td>Elaine Leavy</td>
</tr>
<tr>
<td>16 Nov</td>
<td>Macroom</td>
<td>Pat Barry</td>
</tr>
<tr>
<td>17 Nov</td>
<td>Longford</td>
<td>Dan Clavin</td>
</tr>
<tr>
<td>22 Nov</td>
<td>Athenry</td>
<td>Dan Clavin</td>
</tr>
</tbody>
</table>

cost of this course is €75. Please contact Elaine Leavy on 087-9833285 for more information on this course.

There are also ‘Introduction to Organic Farming’ courses being held nationwide over five consecutive weeks. The cost of this course is €220 and will be held in the locations detailed in Table 2 above.

You can contact the relevant course leader for more information:
- Pat Barry, Moorepark: 087-2138331
- Dan Clavin, Athenry: 087-9368506
- Elaine Leavy, Grange: 087-9833285
- James McDonnell, Oak Park: 087-3263820

AESI ANNUAL CONFERENCE & YOUNG RESEARCHER

24 November & 25 November

The AESI Annual Conference 2011 will be held on Thursday, 24 November in the conference centre in Teagasc Food Research Centre, Ashtown, Dublin 15. The conference will include a keynote address, as well as papers on themes such as agriculture, the environment, rural development, food marketing, supply chain management, land use and development economics.

The conference offers an opportunity for researchers and students to present their work, discuss topical issues and network with their peers. The conference is being held in conjunction with the Rural Economy and Development Programme (REDP), Teagasc.

The AESI Young Researcher Seminar 2011 will be held on the following day, Friday 25 November, at the same venue. The meeting will provide post graduate students with the opportunity to present their research findings to an audience of their peers.

The seminar is open to all students pursuing a post graduate research degree in the subject areas of agriculture, the environment, rural development, food marketing, supply chain management, land use, development economics and rural sociology. The Bob O’Connor Prize will be awarded for the best presentation on the day, and a separate award is also made to a student in the early stages of their research.

SHEEP WINTER SEMINARS

November/December 2011

Maximising returns from your sheep enterprise

All sheep farmers are invited to attend one of the Teagasc winter sheep seminars detailed in Table 3 below.

Table 3: Sheep winter seminars

<table>
<thead>
<tr>
<th>Date</th>
<th>County</th>
<th>Location</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mon 14 Nov</td>
<td>Cavan</td>
<td>The Errigal Hotel, Cootehill</td>
<td>8.00 pm</td>
</tr>
<tr>
<td>Wed 16 Nov</td>
<td>Donegal</td>
<td>Clannree Hotel, Letterkenny</td>
<td>8.00 pm</td>
</tr>
<tr>
<td>Tues 22 Nov</td>
<td>Dublin</td>
<td>Teagasc, Kinsealy, Malahide Road</td>
<td>8.00 pm</td>
</tr>
<tr>
<td>Wed 23 Nov</td>
<td>Donegal</td>
<td>Inishowen Co-op, Carndonagh</td>
<td>8.00 pm</td>
</tr>
<tr>
<td>Wed 23 Nov</td>
<td>Meath</td>
<td>Teagasc, Kells Road, Navan</td>
<td>8.00 pm</td>
</tr>
<tr>
<td>Wed 23 Nov</td>
<td>Waterford</td>
<td>Teagasc, Dungarvan</td>
<td>8.00 pm</td>
</tr>
<tr>
<td>Thurs 24 Nov</td>
<td>Galway</td>
<td>Teagasc, Athenry</td>
<td>8.00 pm</td>
</tr>
<tr>
<td>Tues 29 Nov</td>
<td>Mayo</td>
<td>The Valkenburg Hotel, Ballinrobe</td>
<td>8.30 pm</td>
</tr>
<tr>
<td>Tues 29 Nov</td>
<td>Cork East</td>
<td>Cork Marts, Corrin, Fermoy</td>
<td>8.00 pm</td>
</tr>
<tr>
<td>Tues 29 Nov</td>
<td>Wicklow</td>
<td>The Glendalough Hotel</td>
<td>8.00 pm</td>
</tr>
<tr>
<td>Wed 30 Nov</td>
<td>Westmeath</td>
<td>Teagasc Office, Mullingar</td>
<td>8.00 pm</td>
</tr>
<tr>
<td>Wed 30 Nov</td>
<td>Kerry</td>
<td>Beeners Hotel, Dingle</td>
<td>8.00 pm</td>
</tr>
<tr>
<td>Thurs 1 Dec</td>
<td>Kilkenny</td>
<td>The Spring Hill Court Hotel</td>
<td>8.00 pm</td>
</tr>
<tr>
<td>Mon 5 Dec</td>
<td>Kildare</td>
<td>Teagasc, Naas</td>
<td>8.00 pm</td>
</tr>
<tr>
<td>Mon 5 Dec</td>
<td>Tipperary</td>
<td>Cahir House Hotel, Cahir</td>
<td>8.00 pm</td>
</tr>
<tr>
<td>Tues 6 Dec</td>
<td>Wexford</td>
<td>The Riverside Park Hotel, Enniscorthy</td>
<td>8.00 pm</td>
</tr>
<tr>
<td>Tues 6 Dec</td>
<td>Tipperary</td>
<td>Teagasc, Nenagh</td>
<td>8.00 pm</td>
</tr>
<tr>
<td>Wed 7 Dec</td>
<td>Leitrim</td>
<td>Teagasc, Sligo Road, Manorhamilton</td>
<td>8.00 pm</td>
</tr>
<tr>
<td>Wed 7 Dec</td>
<td>Louth</td>
<td>Teagasc, Dundalk</td>
<td>8.00 pm</td>
</tr>
<tr>
<td>Thurs 12 Jan ‘12</td>
<td>Roscommon</td>
<td>The Abbey Hotel</td>
<td>8.00 pm</td>
</tr>
</tbody>
</table>
A Taste of the Unexpected
Mark Diacono (Quadrille, 2010)

Author, Mark Diacono, would like us to stop growing potatoes, carrots and onions on the grounds that it is a waste of valuable time, given that such food can be easily and cheaply bought in shops. A more adventurous approach is called for:

Our weeding and watering, and the time spent preparing the ground, should instead be devoted to growing what is more remarkable and not always so readily available in supermarkets: tree fruits like medlars and mulberries, soft fruits like rhubarb, nuts (almonds and sweet chestnuts), beans and greens (globe artichokes, asparagus), and leaves and flowers like nasturtiums and sorrel.

For each of these, and many more, the author provides practical advice on growing (apricots need shelter from harsh winds, quinces abhor alkaline soil, almonds can withstand cold to around -15°C, weeding asparagus is essential), information on varieties, when and how to harvest, and concluding with a recipe as an example of how best to enjoy what has been grown.

A Taste of the Unexpected costs €11.94 from The Book Depository (www.bookdepository.co.uk) and this includes postage to Ireland.

Sean Sheehan

New Teagasc Authority member

Mr Tommy Cooke has been appointed to the Teagasc Authority by the Minister for Agriculture, Food and the Marine, Simon Coveney TD, and attended his first meeting of the Authority on Wednesday, 5 October.

Tommy Cooke is a dairy and beef farmer from Renaghmore, Grange, Barna, Thurles, Co Tipperary. He is a member of the national council of ICMSA and is a former chairman of the ICMSA’s dairy and rural development committees. He is chairman and founding member of the Irish Wind Farmers’ Co-operative Society Ltd., known as Meitheal na Gaoithe, and is also chairman of Barrow Nore Suir Rural Development Ltd. He is also active in community organisations and in the renewable energy sector. He replaces Joe Fitzgerald on the Authority.

Lifetime award for Grange researcher

The Irish Grassland Association has presented its Lifetime Merit Award to Dr Padraig O’Kiely of Teagasc Grange. Dr O’Kiely is one of the leading figures, worldwide, in forage agronomy, conservation and utilisation. He has published almost 600 scientific articles, over 400 articles in the technical and popular farming press and has given over 1,000 presentations to farming and industry conferences and events. Pictured above from left to right are Dr Fearga O’Kiely (wife of Padraig O’Kiely), Dr Aiden Conway (past president of the Irish Grassland Association), Dr Padraig O’Kiely (Teagasc, Grange) and Dr Padraig French (President of the Irish Grassland Association).

Dr. Kevin Heanue of Teagasc is calling for artisan food producers, who wish to join an exciting development project sponsored by the European Union through the INTERREG Northern Periphery Programme, to contact him immediately.

Successful model

The project is based on a successful model developed in Quebec, Canada, over 20 years ago, where rural artisan businesses are supported to develop a tourism aspect to their operations called Économusée. Successful Économusées form a tourism-based network, or trail, which assists the businesses in expanding sales and sustaining employment.

To date, two Économusées have been created in Ireland: The Connemara Smokehouse in Ballyconneely, Co Galway, and Celtic Roots in Ballinahown, Co Westmeath. Several Économusées have been launched in Northern Ireland as well.

Teagasc, as the Irish partner in the INTERREG Northern Periphery Programme project, now seeks to help two artisan food producers to join this network.

Calling artisan food producers
High EBI cows and grass budgeting work well in winter milk systems

The Teagasc message for profitable spring milk production has been clearly defined as high EBI genetics, maximum use of grazed grass and cost control. The message is supported by the results of experiments at various research sites across the country.

But what about herds producing all year round liquid milk or supplying winter contracts? What are the guidelines for such herds, particularly where land base is limited? There has been a broad perception that a much different cow type is required, and that standard grazing practices may not apply.

High input versus low input systems

To explore some of these issues, a three-year project was undertaken at Johnstown Castle which compared a range of feeding systems for winter milk herds. The trial was conducted in conjunction with the Moorepark winter milk programme, and has concluded recently.

An interesting comparison within the trial has been the high input versus high forage systems (Table 1). The high input (RED) system was heavily stocked (equivalent to 160 cows on 100 acres) and imported 50% of its annual feed budget.

The high forage (GREEN) system was moderately stocked (110 cows on 100 acres) and produced all its own forage as grass or grass silage. Both systems had all cows calved from September-November.

During the winter period the cows on the RED system were offered maize, grass silage, concentrates and wet grains while those on the GREEN system were offered grass silage plus concentrate fed in-parlour. This resulted in a 3-4 litres higher daily milk yield indoors for RED, with improved protein percentages also.

The objective for both systems was to commence spring grazing in mid-February in order to set up paddocks for subsequent grazing rounds. Here, the GREEN system had the advantage of having silage area available for grazing, whereas buffer feeding was needed to offset the high stocking rate of the RED group. From mid-April onwards, both groups were offered grazed grass with minimal supplements and performed similarly.

Milk Yield Performance

Milk yield performance of the systems is detailed in Table 1. A combination of higher milk solids per cow and heavier stocking rate resulted in over 800kg extra milk solids sold per ha for the RED group. However, approximately eight tonnes of extra feed DM was imported to sustain this.

Importantly, both groups utilised pasture with the same degree of efficiency despite the difference in feed imported (11.5 tonnes forage per ha on the grazing block). This was achieved by using pasture budgeting principles on both systems (spring rotation plan, summer wedge, autumn grass budget).

High EBI for winter milk

An important observation from the experiment has been the yield potential of high EBI cows for winter milk. The herd in Johnstown has an EBI of €100, balanced for milk and fertility. The herd PD for milk is +160kg, not extreme by any means, yet milk delivered per cow has consistently been in the 7,000-7,500 litre range with protein composition in excess of 3.50%. The future breeding policy will be to hold milk yield while improving...
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milk solids and fertility. The simple message is that winter milk herds on high input systems can also use high EBI sires with confidence.

Economics

The economics of running the described systems on a 40ha grazing block have been compared. Table 2 shows the relative margins at 27cpl base milk price. The high input system generates much greater milk sales revenue; however feed costs are 2.8 times higher and the fixed costs (hired labour, machinery, buildings etc) associated with the system are also higher. This results in a similar margin per hectare at the 27cpl milk price. A key point to note is the exposure to volatility in the RED system. If milk price falls to 22cpl then all cash surpluses are eroded, while feed price hikes have a greater proportional effect on total costs. On the other hand, the RED system will gain to a greater degree when milk prices rise.

It is also essential to point out that achieving a high level of forage utilised (>11.5 tDM/ha) was essential for profit across the systems. This is illustrated by the fact that a 3-tonne reduction in forage utilised (i.e. to 8tDM per ha) would reduce profit per ha by over €600 for the RED and GREEN systems alike.

Table 1: Milk yield and feed input for high and low stocking rate systems

<table>
<thead>
<tr>
<th>Stocking Rate</th>
<th>High Input (Red)</th>
<th>High Forage (Green)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Milk yield per cow</td>
<td>7,390</td>
<td>7,163</td>
</tr>
<tr>
<td>- fat %</td>
<td>4.09</td>
<td>3.88</td>
</tr>
<tr>
<td>- protein %</td>
<td>3.56</td>
<td>3.47</td>
</tr>
<tr>
<td>Milk solids per ha</td>
<td>2262</td>
<td>1448</td>
</tr>
<tr>
<td>Concentrate fed per cow</td>
<td>1.35</td>
<td>1.10</td>
</tr>
<tr>
<td>Total imported feed per ha</td>
<td>11.7</td>
<td>3.6</td>
</tr>
</tbody>
</table>

Table 2: Economic comparison of high and low stocking rate systems

<table>
<thead>
<tr>
<th>Per ha</th>
<th>High Input (RED)</th>
<th>High Forage (GREEN)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Milk Revenue¹</td>
<td>€8,166</td>
<td>€5,476</td>
</tr>
<tr>
<td>Purchased Feed</td>
<td>€1,972</td>
<td>€708</td>
</tr>
<tr>
<td>Other Variable Costs</td>
<td>€1,583</td>
<td>€1,325</td>
</tr>
<tr>
<td>Fixed Costs²</td>
<td>€2,769</td>
<td>€1,695</td>
</tr>
<tr>
<td>Margin per ha</td>
<td>€1,842</td>
<td>€1,748</td>
</tr>
</tbody>
</table>

¹ Based on 27cpl base milk price
² Including paid labour but excluding own labour

What next?

A new experiment begins in Johnstown Castle in early November, comparing feed-to-yield and flat-rate concentrate feeding systems for split-calving herds.

Updates and details available on www.teagasc.ie.
Navan was the venue for the Teagasc Liquid Milk Conference held recently. Joe Patton, Teagasc liquid milk specialist, assembled experts in the area of nutrition, herd management, grassland and breeding to address this important annual event for liquid milk producers. This article looks at the main messages to emerge from the event.

With the change to payment for liquid milk on an ‘A+B-C’ system, liquid milk suppliers are asking if the cost of feeding cows to achieve higher milk solids will be higher. Siobhan Kavanagh, Teagasc nutrition specialist, clearly demonstrated that the cost of high milk solids does not have to be high feed costs; in fact, the opposite can be the case. In most instances, it means doing the simple things right.

She presented the data in Table 1, from 200 liquid milk suppliers, to back this up.

The volume of milk solids produced was similar for the three categories of liquid milk suppliers, despite differences in milk solids concentration. The farmers with higher milk solids concentration had lower feed costs, lower total variable costs and higher net margin. She outlined a number of key nutritional principles for achieving higher milk solids, while concluding by reminding farmers that without an appropriate breeding programme, nutritional factors will have a limited effect on milk solids production.

Breeding was dealt with in detail at the afternoon session by a panel of speakers. The main points to emerge were:

- Cows milking ‘off their backs’, i.e. losing excessive body condition will have a lower submission rate, conception rate and overall pregnancy rates.
- Farmers should get into the habit of condition scoring cows when they are being handled for other reasons anyway, e.g. scanning.
- Use the information recorded to help make improved management decisions.
- Nutrition is not the biggest and never the only factor reducing herd fertility.
- Data from Northern Ireland shows that an increased calving interval reduces annual milk yield; 305-day yield remains unchanged while lactation yield increases.
- Further data from Northern Ireland shows that the average cow is culled after 3.5 lactations and that the principle reasons for culling are infertility (27%), lameness (15%) and mastitis (10%).
- The importance of cow families is often overlooked; the industry sometimes overlooks the part played by the females by focusing on the male side only.
- It is not possible to feed your way out of an infertility problem.
- Consider the long-term benefit of breeding and feeding decisions rather than solely focusing on the short-term gains, e.g. diet protein content in early lactation to drive milk output at the expense of high levels of body condition loss.
- Select cows to produce higher milk solids content. Every extra kilo of milk volume contains fat, protein and lactose: if the cow can concentrate the fat and protein in a smaller volume, the cow saves the energy cost of producing the additional lactose.

At one point, the afternoon session chairman, Frank O’Sullivan, asked for a show of hands from those who were ‘unhappy with their herd fertility’. Practically all those in the room raised their hand. So, clearly, herd fertility is a problem; potential solutions were discussed at the event.

Time for action

Having recognised the problem and identified the solutions, it is now time for action. It won’t be easy. It will take time. The reward will be improved herd fertility and overall performance leading to improved margins for the farmer.

Joe Patton addressed the issue of calving pattern and its effect on production costs. He started by reminding farmers that producing winter milk in excess of contracts add to feed costs in a split calving system.

It is possible to model the optimum calving pattern for your circumstances using a new Teagasc computer model.
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Table 1: Effect of milk solids concentration on feed costs, total variable costs and net margin

<table>
<thead>
<tr>
<th>Annual milk solids % (fat + protein %)</th>
<th>7.00%</th>
<th>7.25%</th>
<th>7.50%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual milk solids, kg</td>
<td>451</td>
<td>450</td>
<td>454</td>
</tr>
<tr>
<td>Feed cost, cpl</td>
<td>6.00</td>
<td>5.35</td>
<td>4.71</td>
</tr>
<tr>
<td>Total variable costs, cpl</td>
<td>11.99</td>
<td>11.48</td>
<td>10.97</td>
</tr>
<tr>
<td>Net margin, cpl</td>
<td>5.83</td>
<td>6.99</td>
<td>8.15</td>
</tr>
</tbody>
</table>

ABOVE: Indoor feed costs can be reduced by ensuring that the grass silage component of the winter diet is of the highest quality.

RIGHT: It is important to reseed for quality silage and rearing of young stock.

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This optimum pattern is calculated to meet daily milk supply contracts for the least annual feed cost. It is likely to be herd specific. This computer model is available through Teagasc dairy advisers. Aidan Lawless, farm manager, Teagasc winter milk herd, Johnstown Castle, outlined the key management decisions taken in relation to autumn and spring grassland management.

Benny Keogan, Teagasc dairy adviser, added to the grassland message by emphasising the importance of re-seeding for quality silage and rearing of young stock. Indoor feed costs can be reduced by ensuring that the grass silage component of the winter diet is of the highest quality.

Farmers can achieve higher performance from young stock through paying more attention to grassland management for these animals. This is a neglected area on many farms. Improved grassland management will allow heifers to calve down at two years with much reduced meal inputs. Benny quoted a farmer client of his who said that ‘grassland management does a lot for my cows, but it does even more for my calves and heifers.’

Finally, Benny reminded farmers that it is possible to carry grass covers of 1,000 kgDM/ha over the winter, provided it is clean grass, i.e. has been well grazed on the second last and last rotation.

Anne-Marie Butler, speaking on behalf of event sponsors, Ulster Bank, spoke of the optimism among dairy farmers, while warning that too many farmers did not have a handle on their costs of production.

She advised farmers to take the time to work on the financial figures and that this lack of knowledge is hindering many farmers in securing finance for on-farm expansion. For those farmers under financial pressure, she urged them to talk to somebody; in most cases, a solution is possible.

Quotes from the conference

• "A lot of liquid milk herds have no calving pattern"
• "It is easy to improve calving pattern on paper; it is a lot more difficult in reality. It may take five or six years, but it has to start with this year’s breeding season."
• "There is an itch about expansion but efficiency is more important"

Key management decisions for autumn and spring grassland management

**Autumn**

- Don’t build a big peak – aim for a maximum pre-grazing yield of 1,700 kgDM/ha and an average farm cover of 850 kg DM/ha
- Start the last round by October 5th and aim for a last round of 30 to 40 days (depends on stocking rate)
- Avoid buffer feeding, with forage, for as long as possible
- Supplement with a high energy concentrate
- Leave enough grass at closing for the spring
- House cows once target closing cover is reached and get them settled on ‘winter diet’

**Spring**

- Minimum of 4kg grass DM per grazing
- Post-grazing height <4cm; to set up the farm for second and subsequent rounds
- Use the Spring Rotation Planner
- Work on a weekly area to be grazed
- Be flexible – take advantage of weather conditions
- Reduce indoor feeding allowance on grazing days
- Stick to the plan
- It is very important to get the planned area grazed in February – so that it will have recovered for the second grazing in early April.

Once-a-day milking is not suitable for herds with a bulk tank SCC > 200,000 cells/ml.
Plan ahead for the drying off period

Finola McCoy, Teagasc Animal and Grassland Research and Innovation Programme

At the end of lactation, the dry period provides an opportunity for the udder to repair and regenerate.

Milk secretion shuts down and a keratin plug forms in the teat canal, sealing it off. This plug takes around two weeks to form and then begins to dissolve again in the last two weeks before calving.

Thus, the two weeks after drying off and the two weeks before calving are high risk times for picking up new udder infections.

Dry cow therapy (DCT) consists of intramammary antibiotic tubes and/or teat seal.

The objectives of DCT are:
1. Eliminate existing udder infections at the end of lactation.
2. Prevent new infections over the dry period.

Tip 1: Plan ahead

• Review expected calving dates – plan so the cow has a minimum six-week dry period (eight weeks is preferable).
• Dry off low yielding cows (less than 9 litres/day) earlier than the planned date.
• Where cows are yielding > 12 litres/day in the week before planned drying off, reduce feed intake, but not water access.
• Dry cows off abruptly – don’t skip milkings!
• Treat any clinical cases of mastitis before drying off.
• Discuss appropriate DCT antibiotic selection with your vet, based on culture results, previous response rates etc.
• Organise trained help for drying off and allow sufficient time.
• Only dry off a manageable number of cows at a time, i.e. a maximum of 20.

Tip 2: Technique is important

• Be prepared! Organise disposable gloves, teat wipes/cotton wool and methylated spirits and intramammary tubes.

Don’t store tubes in warm water or remove tube caps until ready.
• Mark the cow before you start treatment, to avoid any mistakes later.
• Milk out the quarter fully and disinfect the teats thoroughly with teat wipes or cotton wool and methylated spirits, starting with the teats furthest away from you.
• Treat the teats nearest to you first, followed by the more distant teats.
• After infusing the intramammary antibiotic tube, massage the contents up into the udder.
• Finish by thoroughly teat dipping all four teats.

Tip 3: What are teat sealants?

Teat sealants are non-antibiotic tubes that protect against new mastitis infections during the dry period and prior to calving.

Remember to:
• Administer after antibiotic DCT, into a clean disinfected teat.
• Gently close off where the teat joins the udder before infusing the tube contents.
• Do not massage the udder after the teat seal is inserted — teat seal must stay in the lower part of the teat.
• After calving, avoid any teat sealant residue by stripping each quarter 10 to 12 times at the first milking.
• Keep freshly calved cows out of the tank for at least eight milkings. Carefully clean clusters and plant to avoid teat sealant clumps forming.

Tip 4: Over quota?

Now is an ideal opportunity to dry off your high cell count cows and reduce the infection risk in your herd! Some people are reverting to once-a-day milking to manage production. While once-a-day milking itself does not appear to significantly increase the incidence of intramammary infection, it can increase the individual cow SCC and thus the bulk tank SCC.

Be aware:
• Once-a-day milking is not suitable for herds with a bulk tank SCC > 200,000 cells/ml.
• High SCC cows may need to be dried off sooner than you planned.

Flush Away Mastitis

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• Gently close off where the teat joins the udder before infusing the tube contents.
• Do not massage the udder after the teat seal is inserted — teat seal must stay in the lower part of the teat.
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Introducing the Teagasc Dairy Manual

A practical resource for any farmer who plans a future in dairying

Mark Moore, Teagasc Publications Manager

In 1972 Ireland was about to enter the EEC and dairy farmers faced exciting opportunities for growth and expansion. At that time, An Foras Talúnais, one of the organisations which merged to form Teagasc, produced a comprehensive guide to dairy farming.

Today, with the prospect of quota abolition in 2015, dairy farmers can again look forward to a period of growth in the medium term. As farmers plan and prepare for the world ‘post quotas’, Teagasc has produced a comprehensive manual for existing and potential dairy farmers, the ‘Teagasc Dairy Manual’ (TDM). The manual, which will be available at the Teagasc Dairy Conferences, will be a practical resource for any farmer who plans a future in dairying.

The TDM extends to over 300 pages and addresses the full range of issues facing existing and potential dairy farmers: business management, dairy facilities, the environment, milk quality, feeding dairy animals, dairy breeding and animal health.

These subject areas are sub-divided into a total of 49 chapters dealing with everything from taxation and keeping track of dairy business finances, to the benefits of project management for a new dairy enterprise or expansion of an existing business. Operational issues such as feeding, breeding and animal health are also covered in detail.

The TDM is designed to be ‘dipped into’ by the reader to address issues as they arise during the year. Checklists, key risks and ‘How to’ sections increase the ‘ease-of-use’ for the reader. Ease of ‘navigation’ was one of the key requests from leading dairy farmers consulted about what the TDM should contain and how it should be laid out.

Team effort

The manual brings together input from frontline Teagasc dairy advisers, Teagasc dairy specialists, Teagasc college dairy lecturers and Teagasc research scientists, vets and economists. The TDM also includes material from the Department of Agriculture, Food and the Marine and Animal Health Ireland. Combining the knowledge and experience of all sectors of Teagasc has yielded comprehensive and ‘user-friendly’ answers to questions which face every farmer with an interest in dairying. A total of more than 200 questions are addressed within the 49 chapters. We believe the manual will be of benefit to even the most experienced dairy farmers.

The manual has been produced in waterproof, tear-proof paper with strong ring binding so it can be taken out of the office or kitchen without fear of it being damaged by wear and tear in the parlour or even the field. The Teagasc Dairy Manual will be available at the Teagasc Dairy Conferences at the Teagasc client price (no p&p).

From 20 November, the Teagasc Dairy Manual will be available at €50 plus postage and packing. The price for Teagasc clients is €25 plus p&p (€7.50).

How to order:

Contact Teagasc on 059-9170200 and pay by credit card, or send a cheque and your name and address to cover the full cost to Alison Maloney, Publications, Teagasc, Oak Park Carlow, Co Carlow.
TEAGASC DAIRY MANUAL

A Best Practice Manual for Ireland’s Dairy Farmers
A survey among discussion group members indicated that in apportioning the feed costs of a suckler cow about two-thirds was attributable to winter feed, mainly silage, and one-third to grazed grass. Therefore, reducing the proportion of winter feed in the annual diet and increasing the proportion of grass will reduce overall feed costs.

The feeding value of grass is up to 50% higher than average silage, taking intake and digestibility into account, so cows on grass will milk better and gain weight cheaply while at pasture. Extra weight in the form of body reserves can be used to reduce more expensive winter feed in both lactating and dry cows.

In the Irish climate, with a long grass growing season, the manipulation of the cows’ body condition between winter and summer is an important strategy in controlling costs. This dictates that both spring and autumn calving cows come into the winter in good or excess condition and go out in spring at a lower body condition in the order of 0.5 to 1.0 body condition score. Adjustments are made to take account of the stage in the production cycle.

**Body Condition Scoring (BCS)**

The system of body condition scoring is very useful for setting feeding guidelines for suckler cows and works on the simple principle of “feed to achieve appropriate condition score in relation to the production stage”. Body condition scoring involves regular assessment of the body condition of individual cows and the calculation of the herd average. The appropriate body condition score varies with the stage in the production cycle.

The targets refer to herd averages and indicate that herd body condition scores should move in the range of 2.0 to 3.0 or slightly higher. Individual cows will be 0.5 to 1.0 scores outside the targets. Where cows are significantly off target there are consequences for the cost of winter feed (concentrates may be required) and for reproduction.

Having cows much above 3.5 is wasteful and increases calving difficulty if they are too fat at calving. On the other hand, if cows are too thin at calving or mating, return to breeding will be significantly delayed. Research by Professor Michael Diskin shows that cows that are under condition score 2.0 at calving will be up to two weeks slower going back in calf than cows that are at condition score 2.5 at calving. Since suckler cows do not come in heat until about 50 days after calving a further delay of two weeks will result in a lengthening of the calving interval (period between calvings) and mean it is impossible to maintain a 365 day calving interval.

### Table 1: Target Body Condition Scores

<table>
<thead>
<tr>
<th>Production Stage</th>
<th>Autumn Calving</th>
<th>Spring Calving</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calving</td>
<td>3.0</td>
<td>2.5</td>
</tr>
<tr>
<td>Mating</td>
<td>3.0</td>
<td>2.5</td>
</tr>
<tr>
<td>Turnout to grass</td>
<td>2.0</td>
<td>2.5</td>
</tr>
<tr>
<td>Weaning</td>
<td>2.5</td>
<td>3.0+</td>
</tr>
</tbody>
</table>

**System of Body Condition Scoring**

There are a number of methods of body condition scoring - Scottish, American & French. The method generally used in Ireland is the Scottish one (Loman et al. 1976) with a 0-5 scale and fractions of units commonly used. Cows are assessed for body condition score 2.0 at calving will be up to two weeks slower going back in calf than cows that are at condition score 2.5 at calving. Since suckler cows do not come in heat until about 50 days after calving a further delay of two weeks will result in a lengthening of the calving interval (period between calvings) and mean it is impossible to maintain a 365 day calving interval.
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If the same cow was at BCS of 2.5 or less, approximately 168 kg of barley would need to be fed to maintain body condition up to calving.
However, cows can tolerate a moderate protein deficit for a period without ill effects. Where good quality barley or straw makes up the sole roughage diet, cows need approximately 2.5 kg of a high protein ration, (18% crude protein) to provide adequate energy and protein. Straw is not a very suitable diet for lactating cows as it requires a high level of concentrate supplementation. Approximately 100g per day of a dry cow mineral / vitamin mix should be fed in the final six weeks of pregnancy. This can be spread on the silage or put in a ration supplement.

Cows in Lactation
In addition to maintenance, a suckler cow requires 0.45 UFL per litre of milk produced. Cows of the more continental beef breeds produce 5-8 litres of milk / day indoors and therefore a 600 kg cow needs 7.8 to 9.1 UFL per day while maintaining body condition.

On high quality silage (72% DMD) the cow giving five litres of milk has an energy deficit of 1.3 UFL per day but an early spring calving cow in good condition can be allowed to mobilise body reserves to make up this modest deficit.

On moderate to low quality silage (64% DMD) the energy supplied falls short by between 1.3 and 2.6 UFL per day. Again, if such cows are in good condition and go to grass in about a month after calving the most that is lost from the cow giving eight litres of milk per day is 0.25 of a condition score which represents 0.5 to 0.7 of a condition score.

Table 3: Energy Requirements (UFL/day) of 600 kg Suckler Cows giving 5 & 8 litres milk per day

<table>
<thead>
<tr>
<th>Feed Supply</th>
<th>Maintenance Alone</th>
<th>5</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>UFL Requirement</td>
<td>5.5</td>
<td>7.8</td>
<td>9.1</td>
</tr>
<tr>
<td>Silage 64%/DMD (UFL/day)</td>
<td>6.5</td>
<td>6.5</td>
<td>6.5</td>
</tr>
<tr>
<td>Surplus/Deficit (UFL/day)</td>
<td>1.0</td>
<td>-1.3</td>
<td>-2.6</td>
</tr>
<tr>
<td>Silage 72%/DMD (UFL/day)</td>
<td>7.1</td>
<td>7.8</td>
<td>7.8</td>
</tr>
<tr>
<td>Surplus/Deficit (UFL/day)</td>
<td>1.6</td>
<td>0</td>
<td>1.3</td>
</tr>
</tbody>
</table>

* Autumn calving cows on low quality silage require 2.5 kg concentrates / day up to mating.

In Short ...
- Use condition scoring to set feeding levels for suckler cows in winter.
- Aim for body condition scores of 5.0 – 5.5 at housing.
- For cows in good body condition, (3.0 or higher) allow for a drop of about 0.7 on spring calving cows and up to 1.0 on autumn calving cows by turnout.
- Moderate quality silage fed to appetite is adequate for dry pregnant cows in good condition at start of the winter. Thin cows need high quality silage or about 1.5 kg concentrates per day to restore body condition at the start of the winter.
- Autumn calving cows get adequate nutrition on high quality silage, while those on low quality silage need 2.5 kg concentrates up to mating and 1.0 kg concentrates per day thereafter until turnout.
- Spring calving cows in good condition at calving can tolerate a deficit in energy intake for a limited period (3-4 weeks) provided they then go onto good spring grass.
- Thin spring calving cows and first calved heifers need about two kg concentrate per day between calving and turnout to grass.

Autumn Calvers
The energy balances for Autumn calving cows giving five to eight litres of milk is the same as for the early spring calvers.

However, in this case the cows have not the short-term prospect of spring grass and in that case they should be kept in energy balance up to mating. This will entail feeding 1 kg concentrate if on high quality silage and up to 2.5 kg per day on low quality silage.

After the cows have gone in-calf they can be allowed to drop in body condition as far as 3.0 – 3.5 at housing.

Table 2: Energy Requirement (UFL / day) of Pregnant Cow, 600 Kg

<table>
<thead>
<tr>
<th>Feed</th>
<th>Maintenance Alone</th>
<th>7</th>
<th>9</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>UFL requirement</td>
<td>5.5</td>
<td>6.6</td>
<td>7.4</td>
<td>8.4</td>
</tr>
<tr>
<td>Silage 64% DMD (UFL)</td>
<td>5.6</td>
<td>5.6</td>
<td>5.6</td>
<td>5.6</td>
</tr>
<tr>
<td>Surplus/Deficit (UFL)</td>
<td>0.1</td>
<td>-1.0</td>
<td>-1.8</td>
<td>-2.8</td>
</tr>
<tr>
<td>Accumulated UFL’s</td>
<td>0.1</td>
<td>30</td>
<td>54</td>
<td>84</td>
</tr>
<tr>
<td>Silage 72% DMD (UFL)</td>
<td>7.1</td>
<td>7.1</td>
<td>7.1</td>
<td>7.1</td>
</tr>
<tr>
<td>Surplus/Deficit (UFL)</td>
<td>1.6</td>
<td>0.5</td>
<td>-0.3</td>
<td>-1.3</td>
</tr>
<tr>
<td>Accumulated (UFL)</td>
<td></td>
<td>15</td>
<td>9</td>
<td>-39</td>
</tr>
</tbody>
</table>

* Autumn calving cows on low quality silage require 2.5 kg concentrates / day up to mating.
Sheep

Finishing lambs from November to March

Michael McHugh
Teagasc Animal and Livestock Research
and Grassland Research and Innovation Programme
Ballyhaise

Last year 680,000 lambs, more than a third of the total annual lamb kill, were slaughtered between 1st November and 31st March. The option of finishing lambs off grass is much more limited for finishing lambs at this time of year. The main options for finishing lambs to suitable carcase weights in the November - March period are:
1. Autumn accumulated grass.
2. Forage crops.
3. Indoor finishing on concentrates.

Autumn Grass

Lamb performance from autumn/early winter grass can be variable with overall lamb performance ranging from 34 gm/day (0.2 kg/week) to 197 gm/day (1.3 kg/week). Well managed high quality grass is capable of giving live weight gains of 150 g/day (1 kg/week) during the autumn/winter period. This level of performance will be achieved by rotating stock on a weekly basis onto quality grass swards at a pre grazing height of 8 cm and eating down to 5 cm.

Trials conducted by Eugene Grennan, Teagasc, Athenry, on lamb growth rates from grass swards in the October - November period showed:
• Increasing the herbage allowance improved animal performance.
• New grass swards gave higher animal performance compared to old grass swards.
• Higher animal performance was achieved on cattle pastures compared to sheep pastures.

As grass growth falls off sharply from early November finishing lambs off grass swards in winter is dependent on a build up of grass from late autumn growth. The option of finishing lambs off grass in winter is more likely to occur on cattle farms, or farms with new reseeds sown in early autumn.

Forage Crops

Lambs can be brought to a satisfactory slaughter weight and finish over a relatively short feeding period on forage crops. The number of lambs finished per hectare will vary depending on crop type, main or catch crop and utilisation rate. Table 2 summarises average individual animal performance and the grazing potential of the main forage crops.

Utilisation rates can vary depending on soil type, crop yield, weather conditions at grazing time and grazing management. Rates are lower on wet, heavy soils than on light, drier soils. Strip grazing results in higher wastage and consequently lower utilisation than block grazing. Higher yields do not necessarily result in increased lamb grazing days as wastage is also increased with high yielding crops. Forage rape and stubble turnips are not very frost hardy and the green tops can deteriorate rapidly in hard frost. These crops should be grazed off by January. Kale and swedes are more winter hardy and can be used right through the winter.

Forage and root crops should be introduced gradually to allow the lambs to adjust to the changed diet. A grass run back should be available at least for the first week after introduction on to forage crops.

Indoor Finishing

Indoor finishing concentrates can be used either as a supplement to hay or silage, or fed ad-lib as a complete diet. Tim Ready, Teagasc, Athenry compared the performance of lambs finished indoors on high and medium quality silages supplemented with concentrates and concentrates fed ad-lib. Table 2 summarises the main results from this research project.

This experiment shows that lamb performance can be influenced by the type of diet fed during the finishing period.

High levels of lamb performance can be achieved from feeding high quality silage (75% DMD) supplemented with 0.2 kg of concentrates. With medium quality silage it takes an additional 0.5 kg of concentrates to maintain carcase gain at what can be achieved with high quality silage.

At current carcass prices (480c/kg) and concentrate costs (€250/tonne),

Table 1

<table>
<thead>
<tr>
<th>Crop</th>
<th>Dry matter yield (tonnes/ha)</th>
<th>Utilisation rate</th>
<th>Lamb grazing days (lambs/ha for 50 days)</th>
<th>Liveweight gain (g/day)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forage Rape (catch crop)</td>
<td>4.0</td>
<td>70% 50%</td>
<td>2800 (56) 2000 (40)</td>
<td>130 - 150</td>
</tr>
<tr>
<td>Stubble Turnips (catch crop)</td>
<td>4.5</td>
<td>70% 50%</td>
<td>3150 (63) 2250 (45)</td>
<td>125</td>
</tr>
<tr>
<td>Kale (main crop)</td>
<td>6.0</td>
<td>70% 50%</td>
<td>4200 (84) 3000 (60)</td>
<td>110</td>
</tr>
<tr>
<td>Swedes (main crop)</td>
<td>7.5</td>
<td>70% 50%</td>
<td>5250 (105) 3750 (75)</td>
<td>100 - 150</td>
</tr>
</tbody>
</table>
ad-lib concentrate feeding resulted in the highest daily margin over feed.
Increasing the concentrate feed level over a 76 day feeding period from 0.5 to 0.8 kg/lamb/day on high quality silage increased lamb carcase value by €10.50 (2.2 kg carcase) and concentrate costs by €5.75 (23 kg). With medium quality silage the extra carcase gain is 1.8 kg, value €8.60, with the extra concentrate fed costing €5.75.

Concentrate feeding
Having lambs accustomed to concentrates on grass before housing will help to avoid set backs at housing. Feed levels should be increased gradually in 50 – 100g increments until the animals are on the full concentrate rate. Adequate trough space, 400 mm per head, is required so that all lambs can eat together when feed levels are being increased. Trough space can be reduced to 100 mm when lambs are eating ad-lib and concentrates are available continually.
Water should always be available and water troughs inspected weekly for cleanliness.
Lambs can be successfully finished indoors on a wide range of feed ingredients.
However certain ingredients e.g. maize distillers, corn gluten should be avoided or inclusion rates limited due to high copper levels. Including some or all the cereals in the ration as whole grains will help to reduce digestive upsets.
The inclusion of ingredients that have higher fiber content such as beet pulp, soya hulls or citrus pulp will help reduce the risk of digestive problems like acidosis.
The higher the energy content of the ration the higher the gain and the lower the feed conversion efficiency.
In general the protein content of the ration can be limited to 12 – 14%. Lambs that went through a store period, e.g. hill lambs, will benefit from a higher 17/18% protein ration for the first three or four weeks of the feeding period.
This can be achieved by feeding an additional 50 gm of soya bean meal for the first 21/28 days.
Roughage should be offered ad-lib after housing and gradually reduced. If straw bedding is used, roughage can be eliminated totally when lambs are on ad-lib feeding. On slats, feed 100gms/day of hay or straw or 0.5 kg silage. A specialised minerals mix for store lambs needs to be included at 2% in the finishing ration.
Shearing will result in increased appetite and increased weight gain. However, some abattoirs may penalise for lambs with shorn pelts.

Table 2

<table>
<thead>
<tr>
<th>Silage</th>
<th>Concentrate (kg/day)</th>
<th>Liveweight gain (g/day)</th>
<th>Carcass gain (g/day)</th>
<th>Dry matter intake (kg/day)</th>
<th>Margin over feed (c/day)</th>
<th>Meals €250/tonne Carcass value €400c/kg Carcass value 480c/kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>75% DMD*</td>
<td>.2</td>
<td>150</td>
<td>74</td>
<td>1.07</td>
<td>22.8</td>
<td></td>
</tr>
<tr>
<td></td>
<td>.5</td>
<td>178</td>
<td>85</td>
<td>1.14</td>
<td>22.2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>.8</td>
<td>200</td>
<td>114</td>
<td>1.22</td>
<td>29.9</td>
<td></td>
</tr>
<tr>
<td>70% DMD**</td>
<td>.2</td>
<td>46</td>
<td>14</td>
<td>.73</td>
<td>-4.8</td>
<td></td>
</tr>
<tr>
<td></td>
<td>.5</td>
<td>109</td>
<td>62</td>
<td>.88</td>
<td>13.2</td>
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<td></td>
<td>.8</td>
<td>160</td>
<td>86</td>
<td>1.01</td>
<td>18.4</td>
<td></td>
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<tr>
<td>Concentrates</td>
<td>Ad - lib</td>
<td>267</td>
<td>157</td>
<td>1.43</td>
<td>39.7</td>
<td></td>
</tr>
<tr>
<td></td>
<td>.5</td>
<td>178</td>
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Keady & Hanrahan 2011

Table 2

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<th>Carcass gain (g/day)</th>
<th>Dry matter intake (kg/day)</th>
<th>Margin over feed (c/day)</th>
<th>Meals €250/tonne Carcass value €400c/kg Carcass value 480c/kg</th>
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</table>

Keady & Hanrahan 2011

* Precision chopped, harvested 11th May (24 hour wilt), Dry Matter 29.2%.
** Precision chopped, harvested 8th June (3 hr wilt), Dry Matter 21.9%
Pre-winter check for your horse management

Wendy Conlon
Teagasc Equine Specialist, Athenry

Grassland management
- You should have ceased slurry application by now.
- Close 50% of the farm by the end of the first week in November making every effort not to poach paddocks.
- In December drain and clean all water troughs, particularly concrete troughs as they are prone to cracking in frosty weather.
- Assess the farm infrastructure. Are more roadways, paddocks, gaps required for easier grazing management? If so, start work before the new grazing season begins.
- Replace any broken stakes or railings. Make sure paddocks are stock proof and safe.
- Check all gaps making sure they are sound underfoot.
- Ensure fence wires can carry shock.

Parasite Control
Worm related problems are still very prevalent in horses. Grassland management, especially over the summer months, has a huge role to play in parasite control. Management practices including mixed grazing with sheep/cattle; manual removal of dung; harrowing; and pasture rotation all serve to reduce the worm burden.

Faecal egg testing has a role to play also. A rule of thumb says that 80% of parasites are in 20% of horses. Grassland management, especially over the summer months, has a huge role to play in parasite control. Management practices including mixed grazing with sheep/cattle; manual removal of dung; harrowing; and pasture rotation all serve to reduce the worm burden.

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Foot care
As at all times of the year it is important to look after your horses’ feet appropriately.
Pick out feet on a regular basis. This time of the year when ground is soft, stones can become lodged in the cleft of the frog; stone bruises may occur. It is good practice to check feet regularly and carry a hoof pick with you. Feet should be trimmed every six to eight weeks. Pay particular attention to the feet of youngsters and pregnant mares.

Teeth check
Teeth should be checked at least once a year. They must be checked for sharp edges, loose or missing teeth, or inflamed gums or signs of dental intervals with specific wormers. However, the level of resistance to chemical products is a cause for concern and may mean that this method of control is not sustainable long term. The use of faecal egg testing and strategic use of chemical wormers is considered to be more appropriate in many situations. Under this strategy:
- New horses on the premises are treated.
- An autumn larvicidal dose is given to all horses at the end of the grazing season which aims to kill encysted small redworms which are not detectable in the faeces (five days Panacur or Equest).
- Annual treatment for tapeworms in September (Pyrantel P, Strongid P, Equitape, Equimax) as faecal egg counts are unreliable.
- Annual treatment for Bots after the first frost (Equest/Ivermectin).
- Periodic testing of faeces of all horses with greater intensity for those that are positive and late pregnant mares.

The benefits of targeted worming are reduced reliance on drugs, cost effective worm control where infection levels are low and identification of ‘at risk’ horses. This method of worm control is not suitable for intensively grazed properties where worm burdens are high.

On farms where the worm burden is high, interval dosing is more suitable as follows:
- Use specific drugs at regular intervals. All horses are treated.
- Target encysted small redworm in February and early November. Tape-worms are targeted in September; bots are targeted after the first frost (see above for treatments).
- Horses are treated at regular intervals for the rest of the year rotating the type of chemical product from year to year. It is okay to use different branded products during the year as long as they are the same type of wormer (eg all ivermectins). It is important to use anthelmintics (wormers) at the appropriate dose intervals as stated on the product information sheet.

Note: Moxidectin (Equest) should not be used in foals under four months of age. Always read accompanying literature and warnings – especially regarding treatment of young horses, pregnant and lactating mares.
disease. If not done already, put on the list of things to do before the year is out.

Flu vaccination
For many horse owners vaccination seems to be something that needs to be done to the horse’s passport in order for it to go to a show, sale, races etc. In fact, it is probably one of the most important ways that owners can ensure the health of their horse and of the horse population.

A major outbreak of flu can be catastrophic for all sections of the industry leading to widespread cancellation of equine events but ensuring good ‘herd’ immunity exists in the whole population helps to modify the effects and curtail an epidemic. Ensure your horses are vaccinated against equine flu.

Body condition and feeding
Over the winter months as temperatures drop and the feed value of grassland declines it is important to ensure that horses maintain body condition. Make sure to use your hand when appraising condition as well as your eye. Heavy winter coats can hide a multitude of sins. Increase forage provision and appropriate supplementation of hard feed may be necessary.

National equine conference

November 15th is a day for all equine enthusiasts to mark in their diary. The National Equine Conference is to be held on this date in Teagasc Moorepark, near Fermoy in Co. Cork.

It is a full day event from 9.30am to 4pm. The opening session will be chaired by Dr. Noel Cawley, chairman of the Board of Teagasc. Speakers in this session include Ms Alison Corbally Director of Breeding and Programmes with Horse Sport Ireland (HSI); Declan McArdle Teagasc; and Mr. Edward Doyle a breeder, international rider, trainer and producer. Recent developments in the ISH studbook, embracing new technology and a breeders perspective of the current market environment and his own formula for success are topics for discussion.

The second session chaired by Damian McDonald of HSI will focus on producing event horses and whether or not the formula has changed? Norman Storey of Teagasc will discuss performance results of the ISH in eventing while Oliver Townend, international event rider and breeder, will discuss if Ireland is still the home of the event horse.

After lunch the subject of the modern showjumper is up for discussion, chaired by Brendan McArdle of the Irish Field. Performance results of the ISH in showjumping will be presented by Wendy Conlon Teagasc. Wiebe Yde van de Lageweg of VDL Stud in Holland will discuss breeding and producing showjumpers for the wider world market; while Robert Splaine, Team Ireland Equestrian Show Jumping Manager will give his vantage of competing at the top end of the show jumping business.

Admission including buffet lunch is priced at €35. Pre booking before the 1st of November is essential through Helen McNulty 091 845217 helen.mcnulty@teagasc.ie. Laser and Visa facilities are available.
Soil

Farming on soggy ground

Waterlogged soil lowers grass growth

James Humphreys, Pat Tuohy, Owen Fenton & Nick Holden, Teagasc Crops, Environment and Land Use Programme

In an experiment conducted by John Mulqueen many years ago, grass growth where the watertable was close to ground level was 30% lower than where the watertable was maintained at deeper than one metre. Wet soils have lower load-bearing capacity and unavoidable grazing damage on wet soil can further lower herbage production by 20% or more. Overall, wet soil conditions can substantially lower grass growth and utilisation and this clearly affects profitability.

At Solohead Research Farm over the last 10 years, annual rainfall has ranged between 796mm and 1,336mm. Wet years caused higher costs and lower milk sales due to lower milk yield and constituents. In wet years, poor grass growth on the farm increased the need for bought-in feed; more concentrates in above-average years and silage or other forage substitutes in exceptionally wet years, such as 2008 and 2009. Difficult grazing conditions increase the length of time that cows are fed indoors on relatively expensive silage and concentrates.

After turnout, difficult grazing conditions and wet grass, sometimes as low as 10% DM, negatively affects animal performance and milk sales. Wet conditions impede silage making, delaying harvest and generally results in poorer nutritive value silage, which has a knock-on effect on cow condition over the winter and on herd fertility. Wet soils increase the incidence of fluke, worms and other diseases, negatively impacting on animal performance and milk sales even where good control procedures are in place.

The problem of wet soils is generally due to a combination of high rainfall, low evapo-transpiration and a low rate of percolation through the soil. Evapo-transpiration is the amount of water that is evaporated or transpired by plants and disperses into the atmosphere as water vapour. It is generally in the region of 450mm per year across the island of Ireland and does not vary much from year to year. It is a very important route for water removal from the soil. The lowest annual rainfall recorded at Solohead in the last 10 years was a little less than 800mm in 2001. Hence, evapo-transpiration (450mm) removed more than half of this from the soil; the remaining 350mm had to percolate down through the soil or flow over the soil surface into open drains.

Annual rainfall

The highest annual rainfall at Solohead was 1,336mm in 2009. In that year, nearly 1,000mm of water had to percolate down through the soil or flow off the soil surface, which was a threefold increase compared with 2001. The soil at Solohead has a high clay and silt content, which impedes the rate of percolation. In 2008 and 2009 annual rainfall was 1,229mm and 1,336mm, respectively, and the top soil remained waterlogged for 14 of this 24-month period. The watertable stayed close to the soil surface during the remaining months, which had a very negative impact on grass growth and caused many of the problems outlined above, including an increase in fluke and the first recorded incidences of rumen fluke on the farm.

A rising watertable is also a problem at Solohead. This is where rain falling on higher parts of the farm percolates down into the ground, moves underground and comes to the surface in low-lying areas. A system of deep underground drains was put in place during the 1980s and 1990s to intercept this rising water and the farm is well drained in this regard.
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Even so, the low permeability of the soils at Solohead remains a problem, particularly under high rainfall. Drainage to alleviate soil wetness promotes deeper rooting, allowing the sward to draw nutrients from a greater volume of soil which improves sward productivity. It also improves load-bearing capacity. In the past, another way of increasing sward productivity on wet soils was to apply more fertilizer. However, in recent years, fertilizers have become very expensive and high fertilizer use is less viable than it used to be. It also does not solve the problem of load-bearing capacity. On the other hand, the cost of land drainage has become more competitive than in the past mainly because of the substantial increase in the capacity of modern machinery to install drainage infrastructure.

The targets of Food Harvest 2020 require higher productivity from farms across the country. Soils with drainage problems account for 40% of the soils in Ireland. Taking this into account, along with the concerns of farmers experiencing problems on wet soils in recent years, at Solohead Research Farm we have started a programme of examining ways of improving the profitability of milk production on wet soils. The main focus of this research is on increasing the length of the grazing season and carrying capacity on heavy textured soil.

One experiment is looking at the effect of cow weight and stocking density on soil compaction and herbage production, comparing Holstein-Friesian (HF) and HF x Jersey (JX) cows at two stocking densities (2.35 and 2.65 cows per ha). Herds are equal in terms of EBI, age profile, calving date, etc. The main difference is liveweight. The HF cows average 610kg per cow compared with the JX average of 480kg per cow. It is still too early to draw firm conclusions, but the JX are clearly ahead of the HF in terms of the efficiency of turning grass into milk.

Despite cutbacks we have been able to set up a state-of-the-art system for evaluating different drainage systems, which include mole drains, gravel-filled mole drains and stone-filled trenches, which were installed during 2011. The process of mole ploughing loosens up the soil, which improves the rate of percolation of water through the soil, and the channel formed by the foot of the mole plough provides a route for the water to exit the soil into collector drains. The moles and gravel-filled moles are 55cm deep at 1.1m spacing and the trenches are 1m deep at 10m spacing. These are being compared with undrained land. Overland flow, drain flow, watertable depth and herbage production are being measured to conduct an economic evaluation of the production response relative to the cost of the drainage. It was recommended in the 1970s that mole drains should last for three years to be economic. Under our circumstances, the gravel-filled mole drains cost 12 times as much to install as the mole drains. It will take a number of years to properly evaluate these different systems of drainage.

Another issue that we are investigating is whether or not it is beneficial to include a corrugated plastic drainage pipe in the stone-filled trench. Plastic pipes and the gravel used to surround them in the bottom of a trench are expensive. It is becoming increasingly common practice on farms not to include them and simply fill the trench with stone. We are evaluating how well trenches work without pipe and gravel. We are also evaluating the best kind of stone to use with and without a pipe. There can be big differences in the quality and the cost of different types of stone used for drainage.

An open day will take place at Solohead next summer when it will be possible to come and see this work.

*This work is part funded by INTER-REG NWE IVB Dairyman Project.*
CPT is as important as CAP

Focusing on cost per tonne is more beneficial than second guessing CAP reforms

Recently published EU Commission proposals on payments to farmers post 2014 have created a good deal of confusion. Some of the proposals were expected: partial flat rate payments for example but “ecological focus areas” - set aside by a different name - and maintenance of permanent pasture came as a shock to many.

Firstly, these are only proposals and face opposition from almost all member countries. The proposals will be negotiated for a minimum of 18 months and perhaps much longer.

There are considerable differences between the views of countries on how CAP reform should be implemented across Europe and arguably even larger differences between the European Commission and the European Parliament.

It’s all to play for over the next two years. Nothing is set in stone and the eventual agreement will probably look very different to the current proposals. However it is important to look at some of the main elements of the proposals to see if farmers should change their current thinking. At present there appears to be a rush by growers to acquire land on the basis that they can take advantage of any “upsides” of the new scheme.

The flat rate payment, if implemented, will have the most dramatic effect on farmers in Ireland. Many growers with high value entitlements stand to lose significant amounts of their Single Farm Payment (SFP) and others who currently have low value entitlements could gain quite substantially.

Currently the total payments are €1.24 billion claimed on 4.7 million hectares. The way the proposals are currently structured, all farmers will receive a basic flat rate payment of €74/ha. In addition to this if the grower fulfills the greening elements of the proposals another €79/ha is available bringing the total possible flat rate payment to €153/ha. Each grower will receive a top up based on historical payments (42% of the overall growers SFP payment).

Based on this flat rate payment any increase in land area increases the total payment by €153/ha but critically dilutes the individual entitlement value due to the historical entitlements.

Planning for 2012

Perhaps many will say it is short sighted not to try and second guess the outcome of the CAP reforms post 2014 but it is important to turn a profit in the meantime therefore financial planning for next year is essential. Growers are disappointed with forward prices on offer for grain at harvest in 2012. These lower prices coupled with increasing fertilizer prices (€30/ton increases over the past few weeks) puts pressure on all cereal crops to turn a profit in 2012.

Market developments (the potential to take forward-prices) in Ireland over the past 3-4 years allow growers to make more informed decisions during the year to help protect profitability in 2012. Decisions to forward sell grain, rent extra land or purchase machinery are all dependent on the ability of the farm to sell grain above the costs of production.

As all growers have different land quality and different ways of working, it only stands to reason that cost structures on every farm are different. Therefore each grower must work out his own costs to establish how much it costs him to produce a tonne of grain.

What is the best way to evaluate my costs?

For as far back as most people can remember costs were worked out per acre. This is useful as growers farm a defined area of land. However growers sell tonnes of grain and therefore it is arguably as logical to work out the production costs per ton of grain than per acre when assessing the total costs.

Forward prices are quoted by merchants throughout the year and all growers have ready access to these prices. However in a decreasing price market how can a grower be sure a forward price is a profitable one?

What are the costs of production?

Most growers will tell you the costs can be completed on the back of a match box and they are probably partially correct. However, ask what machinery figures are used (most likely they are similar to contractor
costs) or how much the newly built shed, ESB, phone, insurance or interest is costing. The back of the match box tends to look very small then.

Table 1 gives an idea of the costs of production in 2010 from the Teagasc National Farm Survey.

As Table 1 shows there are huge differences between the costs of production on each category of farm. Figures from the e-Pro Monitor show similar trends but worryingly there are large differences in costs of production between the top and bottom one-third of growers.

Some of the key figures to note are:
- Materials make up between 45-55% of total costs.
- Machinery accounts for between 35%-45% of total costs.
- The top 1/3 of growers produce grain for 25% lower cost than the bottom 1/3 of growers.

With the forward price of grain hovering around €130-€140 per ton for next harvest it is clear there is little room for error and many growers (bottom 1/3) will lose money by producing grain from their land.

I have not addressed land rental which adds significantly to the costs of production.

For a winter wheat crop a €50/ac increase land rental (@ 4 t/ac) adds €12.50 per ton and in spring barley every €50/ac (@ 2.7t/ac) adds €20/ton to the costs of production.

Every grower should know their costs of production as the grain price is set to remain very volatile for the foreseeable future. Teagasc provide a comprehensive set of tools and expertise to help growers assess these costs and constructive analysis to help minimise these costs.

An excellent starting point is to complete an Teagasc e-Crops program (field by field input analysis also used for Cross Compliance)and a Machinery Depreciation program. Please contact your advisor for more information.

Table 1: Teagasc National Farm Survey

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Note: Land rental is not included
All farmers are obliged to comply with the Cross Compliance Regulations and maintain their land in Good Agricultural and Environmental Condition (GAEC). Failure to do so could lead to penalties being deducted from your direct payments. Farm inspections are ongoing and the following tips are intended to help farmers identify some of the issues that may need to be addressed during the winter period.

» **Fertilizer plan for next year?**

Farmers whose REPS 3 plans have expired will generally need to apply up to 25% less phosphate than they were allowed under REPS 3. New soil samples should be taken now to help accurately plan your fertilizer use for 2012.

» **Clean silage slabs and concrete aprons**

Keep concrete areas in front of silage pits clean by collecting fallen and waste silage and storing it with farmyard manure for the 18 week period. If concrete is regularly cleaned, the rainwater runoff will be regarded as clean water.

» **Keep outdoor concrete yards and passages clean**

Clean and scrape the slurry from dairy collecting yards; and store for the 16/18/20/22 week period in a tank separate from the rainfall and washings from the dairy. Then the rainfall and washings runoff from these areas (which is stored in a separate tank to slurry); will be soiled water which only needs 10 days storage. This soiled water can be landspread during the closed period in suitable conditions.

» **Holding pens and cattle crushes and farm roads**

Scrape and collect the solids immediately after use and store with the slurry or farmyard manure. The rainfall runoff will then be clean water and will not require storage.

» **Storing farmyard manure**

FYM cannot be stored in a heap in fields between 1st of November and the 13th/15th/31st of January. FYM cannot be stored on hardcore but it may be allowed to build up under cattle bedded sheds. If FYM is stored outdoors on concrete, all seepage and effluent must be collected and stored for 18 weeks.

» **Storage of round bale silage**

Store all baled silage at least 20 metres away from watercourses and dry drains. Otherwise you must have effluent collection and storage facilities. If bales are stored away from all drains and watercourses, there should be no leaking of effluent that could seep into groundwater.

» **Should you arrange for soil samples to be taken?**

Land that has been six years or more in continuous tillage must have soil samples taken to determine the Soil

---

Tim Hyde, Teagasc Crops Environment and Land Use Programme
Organic Matter content (€36/sample). Farmers who joined AEOS in 2011 have to have soil analysis on the farm for all lands farmed by the 31st March 2012. A soil analysis for every 8ha to include owned, leased and conacre land is required by the 31st March 2012.

**Food and feed Hygiene**
Prevent contamination of all stored feedstuffs during the winter months. Ensure there is no access for vermin such as rats, mice and birds. Keep a record of purchased poisons and baits and where they are laid around the farmyard (REPS farmyard sketch will suffice with the bait points marked). Chemicals and detergents must be stored securely away from animal feed. Keep all invoices for bought-in concentrates, as they will be examined during a farm inspection.

**Trim hedgerows and encroaching scrub.**
Trimming of hedgerows can only be done between 1st September and 28th February. If you are a REPS farmer, check the yearly schedule of work and identify which hedgerows need to be cut this winter. Remove encroaching vegetation (excluding REPS or natural habitats); as this will reduce the area that you can declare for your SFP in 2012.

**Did you import or export organic manures in 2011?**
If you imported/exported any organic manure (slurry/FYM/pig/poultry/SMC etc) this year you must record the movement and notify the Dept of Agriculture by 31st December 2011.

Form Record 3 (available from Teagasc and DAFM), must be completed and sent to the Nitrates Section in Wexford by the 31st December. Any forms submitted after the 31st December will not be accepted. This includes REPS farmers.

**Derogation applicants in 2011**
If you applied for a derogation in 2011, start collecting your fertilizer and meal dockets for submission to the DAFM for the calendar year 2011. Keep your N&P statement that you received from the DAFM in September in the same file. Approximately 4,600 farmers applied for a derogation to farm at a stocking level in excess of 170Kg’s of organic N/Hectare (NpH). But there are another 3,500 farmers approximately who should consider applying for a derogation each year as they also have a NpH >170Kg’s of organic NpH.
Check your own NpH and see if it exceeds 170NpH in 2011. If so you should consider applying for a derogation in 2012.

Teagasc have organised a series of 58 seminars/meetings on the important issues involved in Cross Compliance and farm inspections in November which will cover the followings issues:-
- What happens during a DAFM inspection.
- Nitrates, cattle, sheep, pesticide, and single farm payment inspection advice.
- What records need to be kept and how to keep them.
- The new land drainage and reclamation regulations.
- See Teagasc newsletters or website for more details.
farm safety

Preventing the anguish

Stop the anguish and agony of PTO shaft entanglement.

John McNamara, Health and Safety Officer, Teagasc

The horror of becoming entangled in a power take shaft was vividly brought home to participants at a recent national Farm Safety conference when plastic surgeon Dr Anne Collins showed pictures of what she and her colleagues dealt with. Most people in the audience had to look away.

The plastic surgeon explained that for every fatality there are also several gruesome injuries. Where PTO injuries take place, 80% had a missing cover while in 40% of cases ‘rushing’ or ‘loose clothing’ were implicated.

Dr Collins also explained that she and her plastic surgeon colleagues had great difficulty in re-attaching severed limbs due to the ‘tear’ nature of the wound and contamination due to such farm materials as oils, soil or slurry. The message is simple ‘prevention is better than cure – cover PTO shafts and moving machinery parts’. Also, turn-off the PTO and the power before approaching a power driven machine.

The European Agency for Safety and Health at Work is currently conducting a campaign for Safe Maintenance. Campaigns need to stimulate action. Examine your farm for items requiring maintenance, particularly un-guarded machinery, which can have lethal consequences.

High Risk Rotating Machinery

Special attention must be paid to equipment used in a stationary position where the operator may be close to a revolving PTO. These include slurry tankers, agitators and grain rollers. Getting caught in grain auger and shafts and belts of milk pumps have also caused deaths on Irish farms. Thus almost all fatalities with power shafts on Irish farms have taken place where the machine is operated in a stationary position.

The key messages:

• Cover the power shaft fully using a guard which is CE marked. Also have the U-guard and O-Guard in place and have 5cm of overlap.
• Make sure that the guard is able to turn freely on its plastic groove so that it is stationary when the power shaft is turning inside. Ensure that the chains or ropes attached are connected at both ends to prevent turning. If a powershaft cover is wedged onto its bearings so that it turns with the shaft it offers no protection and can entangle a person.
• Operators should always be conscious of the dangers of a revolving PTO Shaft and stay clear.
• Work procedures can be adopted to stop the power input before approaching the machine for adjustment.

New Technologies

In recent years, a new PTO cover has been introduced from Australia which has the advantage of having ‘quick release’ delocking clamps which allow easy access to grease points and permit attachment of PTO covers (photo). This product comes in two sizes and is supplied with 10 plastic bearings or running rings so that the cover can be correctly attached to wide range of PTO shafts.

Using hydraulic motor drives is also an alternative to PTO drives especially for contractors and farmers with high machinery usage. While purchasing the hydraulic equipment is more expensive, in the long term running cost are less expensive due to less wear and tear leading to lower maintenance costs.

Farmers Health

Health is the most important attribute for any person, including a farmer. However, a recent national study by Dr Breda Smyth M.D, HSE West found that farmers are five times more likely and agricultural workers more than 7.35 times more likely to die from any cause of death than the lowest risk occupational group.

The study shows that farmers with...
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low size (less that 20 Ha) have particularly heightened mortality levels.
Farmers have the third highest mortality for all causes of mortality, the second highest for circulatory diseases, the third highest for cancers and the fifth highest for injuries and poisonings. Agricultural workers have the highest mortality for circulatory disease, cancers, and injuries and poisonings.

Seek Health Advice
Maureen Mulvihill, Health Promotion Manager with the Irish Heart Foundation said: “It is well known that men are more reluctant than women to seek health advice or to access health services due to several factors including cost, missing out on work or not enough time.

But the harsh truth is that many of Ireland’s men over 45 are at risk of developing heart disease leading to a heart attack. 8 in 10 men in this age group have high cholesterol with only 2 in 10 successfully managing their cholesterol and 7 in 10 men have high blood pressure with only 1 in 10 successfully managing it. Combined with rising levels of obesity, diabetes and smoking, many Irish men are literally a ticking time bomb.

“Latest CSO figures for 2010 showed that nine times as many men (4,636) die from cardiovascular disease than from prostate cancer or five times more than from lung cancer - and this is expected to rise sharply over the next 10 years.

Our goal is to reach out to men with our new prevention manual ‘A man’s guide to heart health’, written from a man’s point of view (available at http://www.irishheart.ie/). We need to ensure that men are equipped with the best tools to prevent them reaching a point when a heart attack symptom may strike.

Our step by step manual takes into account modern lifestyles and tackles, in a positive way, the various behaviours and risk factors that lead to heart attack.”

According to the Irish Heart Foundation seven out of 10 Irish men across all ages, are overweight or obese suggesting that being overweight has become the norm.
This is despite the many risks for the heart and health, such as high blood pressure, high cholesterol and risk of Type 2 diabetes. And more men smoke at 31% compared to 27% for women.

Teagasc/ Health and Safety Authority Study.
Teagasc and the Health and Safety Authority are currently funding a Walsh Fellowship PhD study by Aoife Osborne in the UCD College of Health Sciences.
In a survey of 600 farmers at mainly Teagasc events one of the most positive findings was that 73% of farmers had visited a health professional, most commonly a medical doctor in the previous year. This finding indicates that farmers are taking their health more seriously.

Minister for State at the Department of the Environment, Mr Willie Penrose T.D., indicates his support for farmer health checks.
BOTTOM LEFT: New PTO cover with quick release delocking clamps attract interest.
The Teagasc College of Amenity Horticulture, located at the National Botanic Gardens, is the premier place for horticultural education and training in Ireland. The college offers the widest range of fully accredited courses and the ‘classroom’ stretches out beyond its four walls to include all the vast plant collection of the world renowned gardens.

The National Botanic Gardens took on its first pupils in 1838. There have been a lot of changes since then, of course, and now the education and training in horticulture is conducted by Teagasc.

Horticulture can be defined as ‘the art, science and business of plant cultivation for human use’. This is a very broad definition and can range from food production to amenity products and services to the use of horticulture for health and well-being.

Horticulture is part of the fabric of our lives, yet it can often go unnoticed and not get the recognition it deserves. Flowers are present at all the key events of birth, marriage and death. Every time we sit down to a meal that includes vegetables or fruit; when we relax in a garden or park; as we walk a tree lined pavement or drive on a landscaped motorway; on the football fields or golf courses we play sport on; we are enjoying the fruits of horticulture.

Horticultural education and training in Ireland has evolved greatly since 1838 and, especially, over the past decade. There is now a large number of courses available at various levels of qualification and with the possibility of specialisation in areas of particular interest.

Much of the horticultural content of our courses focuses on the amenity areas of landscape design, construction and maintenance, sportsturf studies, public authority parks management, garden centre operation, nursery stock production but also includes food production and market gardening which are increasingly popular.

As with all industries and businesses, subjects such as communication techniques, business acumen, customer service and computer skills form an integral part of the success of a horticultural enterprise. Including these subjects in horticultural courses has greatly enhanced the industry, yet horticultural students frequently need convincing of this importance — which is understandable when student expectation is focused on studying horticultural plants — and they are confronted with spreadsheets, making presentations, analysing budgets and profit and loss accounts.

Science plays a key role in horticultural practice too — many of the sciences are called upon to form a successful horticultural operation.

A sense of care for the environment must be paramount in horticultural education as there are many horticultural practices that can be harmful to the environment; from the introduction of plants that may be unsafe, such as pest and disease infected plants, or plants that may become serious weeds like giant hogweed or the blue flowered speedwell weed in lawns — both introduced in the past as ‘ornamental plants’.

Personal safety figures prominently in horticultural courses — to the less informed, horticulture may seem a very safe occupation — Working with ‘plants and the soil’ one might think could harm no one. Horticultural work can be hazardous however, particularly when one considers the areas of chemical use, machinery use, manual handling and, not least, the dangers of tetanus infection.

Add to all of this a flair for design, which many students exhibit and enhance while at college and, ultimately, it can be the basis of their career.

One can truly say that a horticultural occupation is a place where science, art and business meet.

• Work placement: All of our horticultural courses include a very
valuable work placement. Education provides the student with the theoretical knowledge, the basic ‘whys’ and ‘wherefores’ of a subject but it is the training that provides the skills and gives trainees the competencies and abilities they need to be successful.

This practical training is key as it allows the student to experience the reality of an actual horticultural work environment. The horticultural industry contributes greatly in this regard, and by their investment of time and effort with work placement students, provide an important core element to the continued development of the industry.

Over the past years, a considerable number of mature students have participated in all of our courses. This is a welcome development as many people find, belatedly, that a career in horticulture is very fulfilling for them. Experience has shown that mature entrants are very committed and have a very positive influence on a mixed age class group.

- **Qualifications:** The National Framework of Qualifications (www.nfq.ie) provides a method of comparing qualifications and ensuring that they are quality assured and recognised, both at home and abroad. Horticultural courses at Levels 4 and 5 form a good starting point for a person who wishes to gain entry to employment in horticulture or to progress to higher levels. At Levels 4 and 5, a person will establish their interest and commitment to a horticultural occupation.

- **The Certificate in Horticulture Level 4** course offered by the college is a one-year introductory horticultural skills course. This course is suitable for persons over 16 years of age, who are physically able for the demands of the course.

The course introduces learners to a range of skills and competencies and provides opportunities for learners to assess their personal attitude, ability and preference. It develops the skills, knowledge and attitude and the level of performance required to access employment and prepares students for education and training at a higher level. The course contains a high level of practical training and there is a four-week placement period. This course is sponsored by FÁS and each trainee on the course receives a FÁS training allowance.
Students who successfully graduate from this course are encouraged to progress to the Certificate in Horticulture Level 5 or the Bachelor of Science in Horticulture Level 7 at the College, which is provided in partnership with Waterford Institute of Technology.

**The Certificate in Horticulture Level 5** can also be a good starting point for a horticultural career and it is the entry point for most students. This one-year course contains more intensive levels of study on a broad range of horticultural subject areas and includes both practical skills training, as well as practical learning while on work placement.

The course is conducted in partnership with the Dublin public authority parks departments and students engage in practical learning while in the parks or in the Botanic Gardens. Students normally spend two days a week in the parks and three days a week at the college.

On successful completion of this course, students may continue their studies on the Advanced Certificate in Horticulture Level 6 course or apply for the Bachelor of Science in Horticulture Level 7 degree. Often, this choice is governed by the type of occupation the student wishes to pursue.

**The Advanced Certificate in Horticulture Level 6** is a natural follow on from the Level 5 Certificate. It concentrates on the practical aspects of horticulture with a 30-week practical learning placement with a Teagasc approved horticultural host. This enables the student to gain valuable experience in the particular area of horticulture they wish to specialise in. This is followed by 12 weeks of college-based learning.

The course provides students with the opportunity to acquire management knowledge, skills and competence to effectively manage and carry out day-to-day tasks and long-term management of parks and gardens and commercial horticultural enterprises. The course is suitable for those seeking employment as supervisors, technicians, unit managers or employment in the horticultural business sector.

**The College also offers a Certificate in Floristry FETAC Level 5** course delivered on a part-time basis. The objective of this course is to provide the necessary knowledge, skill and competency to enable graduates to set up their own business in floristry. Students spend two days per week (Tuesday and Wednesday) on this course over an 18-week period and it also includes a practical learning placement period in a floristry business.

**Advanced Certificate in Greenkeeping Level 6:** Greenkeeping and sports turf management is another very important sector of the horticultural industry. The Teagasc College of Amenity Horticulture conducts a two-year block-release programme to train greenkeepers. This provides the standard qualification for the greenkeeping profession in Ireland, with most of the prominent golf courses in Ireland being managed by golf course superintendents, who are graduates of this course since its inception in the 1980s.

The course is conducted in conjunction with the Golfing Union of Ireland. This course is delivered as a work-based programme and the participants continue to work in their golf course while on the training programme. While on the programme, academic content is delivered at the college and practical assessments are carried out by trained personnel at the golf or sports club.

**Bachelor of Science in Horticulture Level 7:** This is termed an ordinary degree and is a three-year full-time programme offered in collaboration with the Waterford Institute of Technology but with all course work entirely based and delivered at the College of Amenity Horticulture in the Botanic Gardens. Application is through CAO and the course code is WD697. This entry route includes both school leavers with sufficient points from their Leaving Certificate examination (230 points in 2011); mature applicants defined as those who have reached the age of 23 by or on 1 January in the calendar year they seek admission; or those who have achieved a particular standard on a FETAC Level 5 horticulture course, who have an opportunity to apply for entry to the degree course using those results as a pathway by availing of the Higher Education Links Scheme. This is a way of linking further to higher education and could be particularly useful for a person who does not have sufficient points from the Leaving Certificate and is under the age of 23 for mature student entry.

**Opportunity**

There is also an opportunity to advance directly into year two of this degree for successful graduates from our Level 5 or Level 6 horticultural courses. If they have graduated with merit or distinction, they can apply for a limited number of places available for advanced entry directly to year two of the Level 7 degree course, offered in association with Waterford Institute of Technology (WIT). Many of our students have gained access through this non-standard entry route.

This ordinary level degree is very comprehensive and has become the
This is a new venture whereby the Teagasc College of Amenity Horticulture and Dublin City University (DCU) have collaborated to offer this four-year full-time honours degree in horticulture. The course is held on both the DCU campus and at the College in the National Botanic Gardens, Glasnevin, which are within walking distance of each other. The aim is to combine the academic resources of DCU’s Faculty of Science and Health with the horticultural knowledge and expertise of the college and the extensive plant collections, research projects and worldwide network of contacts of the National Botanic Gardens to provide a broad range of expertise to students who wish to pursue this area of study at third level. Entry is through CAO and points required this year were 375.

The course is aimed at students who wish to develop a career in horticulture to the highest professional level. It will be of interest to students who enjoy and appreciate the natural environment and created landscapes and will provide an opportunity to develop interest in the many facets of horticulture, as well as discovering the scientific knowledge that underlies all plant life as well as the creative and business aspects of horticulture.

The first year of the course is mainly located at DCU campus and concentrates on science subjects such as biology, chemistry, physics and mathematics, which are shared with common entry science courses. In year two, an understanding of a range of subjects relating specifically to horticultural theory and practice will be provided, mainly based at the college with some periods at DCU.

In year three, a broader range of horticultural studies are provided at the college while, at DCU, scientific literature and new enterprise development are taken. A period of work experience placement forms an essential component of year three. In the final year, emphasis will be placed on subject areas relating to ecology and environmental management, literature review and presentation and experimental design and analysis. A significant research project must also be completed during this period.

It is hoped that many students will progress from this honours bachelor degree award and avail of opportunities to develop their studies further to masters (Level 9) and doctorate (Level 10) levels by undertaking research into horticulture related areas involving all aspects of plant life and biotechnology.

Further information may be found at the following URLs:
- Teagasc College of Amenity Horticulture: www.teagasc.ie/botanicgardens
- National Botanic Gardens: www.botanicgardens.ie
- Waterford Institute of Technology: www.wit.ie
- Dublin City University: www.dcu.ie

standard entry requirement for the majority of horticultural technical and management occupations. The degree course combines the study of scientific horticultural subjects with business management subjects and it also includes information technology, communications, applied horticultural skills and a work experience semester.

In the final year, a major project forms an integral part of the degree programme.

The degree course in addition to the core, mandatory subject areas also offers opportunity to choose elective subjects in both second and third year. This allows students to tailor their degree towards their own interests or possible future career choices especially when combined with their work placement period with a Teagasc approved host.

Students can select from major electives such as landscape design, nursery stock production, market gardening and turfgrass and minor electives may include advanced design, garden management, computer aided design (CAD), interior landscaping, garden centre operations, horticultural therapy, greenkeeping and floristry. Progression from the Bachelor of Science in Horticulture Level 7 to a BSc (Hons) Level 8 degree in Land Management with Horticulture is available at Waterford Institute of Technology.
Currently the forest cover in Ireland stands at 11% due to an intensive planting programme and an excellent climate for growing trees. As a nation, it is possible to become less reliant on fossil fuels by using our home-grown natural resource to heat our homes and help reach a 12% renewable heat target.

Firewood is readily available but it is important to know what you are buying. Hardwood is sourced in broadleaf plantations. Ash, oak and beech are the main hardwood species that are used for firewood. Hardwood is dense timber that matures slowly; some trees may take over 100 years to reach maturity.

Softwood firewood is produced from conifers/evergreens, mainly sourced from Sitka spruce plantations. The timber grows fast and is less dense. When it is properly dried it is lighter in weight than hardwood. The amount of water in firewood is referred to as its moisture content (MC). Wet firewood burns slowly and releases little heat. It is extremely important that firewood is dried below 30% MC to burn efficiently. Freshly cut softwood is approximately 60%-70% water. The timber should be dried for 18 to 24 months to maximise heat, broadleaves generally require less drying. The moisture content may be high if the firewood is exceptionally heavy in comparison to similar bags or if there is condensation inside plastic bags of logs. Don’t buy water is the message.

To help build confidence in the industry, the Wood Fuel Quality Assurance mark (WFQA) was launched in February 2010. Certified WFQA wood fuel suppliers go through a stringent process of monitoring and quality testing to ensure their produce meets the highest standards.

The scheme is administered by the NSAI and IrBEA, and supported by DAFM and SEAI. Three suppliers are certified to date, Rural Generation who supply certified wood chip, Forest Fuels Ltd who supply certified wood logs (Hot Logs) and D-Pellet who supply certified wood pellets. There are currently seven more companies undergoing certification and many more in the pre application stage.

Softwood or hardwood firewood is equally efficient for burning once the moisture content is the same. The main difference is the space required to store the fuel. Hardwood will need less storage space because the timber is denser. This does not mean that dried softwood firewood is not a good option; it just requires a little more space to store. Hardwood is generally sold at a premium for this reason while softwood firewood is usually sold 10% to 15% cheaper.

The most efficient way of burning firewood is in a log stove. Stoves sales have increased by 35% year on year as home owners realise the benefits of log stoves.

A warm winter cannot be secured alone by using a log stove, it is important to ensure the house is well insulated. There is a huge range of log stoves available for heating a single room, a small or larger house so it is important to shop around to get the best value. Log stoves are at least 65% - 70% efficient unlike traditional open fires which can retain as little as 30% of the heat produced.

To download the new firewood local logs leaflet log on to:

The Teagasc Website: www.teagasc.ie/forestry
The County Clare Wood Energy Website: www.ccwep.ie
RASLRES Website: www.raslres.eu

Checklist for buying firewood

Before you visit the fuel merchant:

• Estimate the size of the storage space you have available.
• Is it covered or open
• How wide is the access to your storage area
• Decide which wood fuel is best suited to your storage space and system.

Before purchasing the fuel from the supplier:

• Check has the firewood a quality mark
• Is it hardwood or softwood
• Is it locally sourced timber
• What is the moisture content
• What is the price
• How will it be delivered - Small Bags- Bulk Bags- Loose

• What size are the logs
• How long will it take for a delivery
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Bovine leptospirosis is a highly infectious disease and is widespread in Ireland with over 70% of Dairy Herds infected\(^1\). If leptospirosis gets in to your herd it can have serious effects on productivity and profitability.