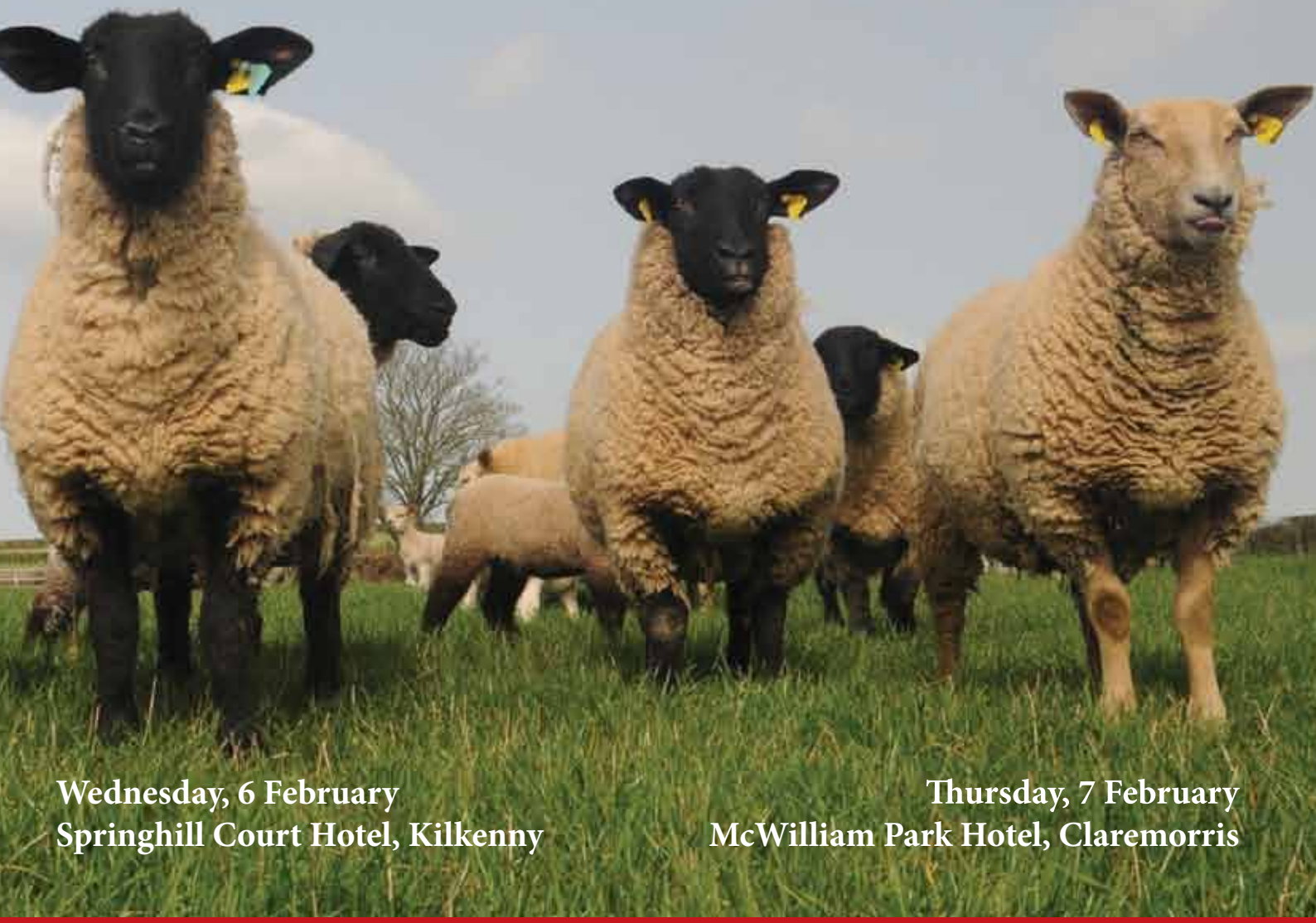
Animal & Grassland Research and Innovation Programme

National Sheep Conference 2013



Wednesday, 6 February
Springhill Court Hotel, Kilkenny

Thursday, 7 February
McWilliam Park Hotel, Claremorris

TEAGASC NATIONAL SHEEP CONFERENCE 2013

Published by

Teagasc
Agriculture and Food Development Authority

Animal & Grassland Research and Innovation Programme

Wednesday, 6 February 2013
Springhill Court Hotel, Kilkenny

Thursday, 7 February 2013
McWilliam Park Hotel, Kilcolman Rd, Claremorris

Programme

15.00 Conference Opening

Dr. Frank O'Mara, Director of Research, Teagasc (Kilkenny)

Professor Gerry Boyle, Director of Teagasc (Claremorris)

Session 1 (15.10) Animal Health

Chairman: Micheál Casey, Regional Veterinary Labs, DAFM,

15.10 – 15.30	***Prof. Mike Taylor*** - **Anthelmintic Resistance and Worm Control in Sheep**
15.30– 15.45	***Dr. Barbara Good*** - **Irish Perspective – Liver and Rumen Fluke**
15.45 – 16.00	***Ms. Catherine O' Leary*** - **Control and eradication of lameness**
16.00 – 16.30	Questions & Answer Session
	10 min Break

Session 2 16.40 Animal Nutrition

Chairman: Prof. Michael Diskin, Teagasc

16.40– 17.00	***Mr. Frank Hynes*** - **Concentrate supplementation of pregnant ewes with an emphasis on late pregnancy nutrition**
17.00 – 17.15	***Dr. Tommy Boland*** - **Mineral nutrition of ewes and lambs**
17.15 – 17.30	***Dr. Philip Creighton, Teagasc*** - **Utilising Grassland in Sheep systems**
17.30– 18.00	Questions & Answer Session
18.00 - 18.15	***Mr. Terry Carroll / Mr. Gerry Murphy, Teagasc*** **Sheep Technology Adoption Programme - €1000 per farm**
18.15 – 18.45	**Refreshments:** Tea / coffee, sandwiches and finger food

Session 3 18.45 Policy & Marketing

Chairman: Mr. Justin McCarthy, Editor Irish Farmers Journal – Kilkenny Conference

Chairman: Mr. Peter Leonard, Teagasc Regional Manager, Mayo – Claremorris Conference

18.45– 19.05	***Mr. Denis Lerouge, Interbev, France*** - **Evolution of the perception of lamb in France: Agneau Presto**
19.05 – 19.20	***Mr. Declan Fennel, Bord Bia*** - **Evolution of the perception of lamb in France: Agneau Presto**
19.20 – 19.35	***Mr. James Murphy, IFA National Sheep Chairman*** - **Policy for sheep farmers**
19.35 – 20.05	Question & Answer Session
20.05 – 20.20	***Mr. Michael Gottstein, Teagasc*** - **The Conference in Perspective - Take Home Messages**

Contents

Foreword

Sheep production is a significant contributor to the agricultural and national economy with an output valued at €209 million in 2012. The 33,766 flocks produce a high quality product, with about 80% of this exported. Significant employment is provided in both the primary production and processing sectors. Good lamb prices in 2011 and 2012 have encouraged modest but welcome expansion. Sustainable markets must be obtained for the increased production.

In the Teagasc National Farm Survey, the top one third of flocks generated a gross margin of €1,098/ha in 2011 and an estimated €957/ha in 2012, indicating that there is significant scope to increase income by improving technical efficiency on many farms. This is also evident from the significant productivity and incomes gains achieved on the Teagasc BETTER Sheep Farms from modest improvements in a number of key technologies that drive productivity and profitability. I would strongly encourage Sheep producers to join the recently announced Sheep Technology Adaption Programme (STAP), join Discussion Groups and visit the Teagasc BETTER farms. Active participation in such Discussion Groups has recently been shown to be a most effective way of getting new technology adopted on farms which subsequently translates into increased productivity and increased farm income.

Major challenges are to improve ewe prolificacy, increase stocking rate, and to manage the challenge of increasing resistance to anthelmintics and the now emerging threat from the Schmallenberg virus. Grass must be the basis of profitable sheep production. There is tremendous scope to grow more grass on farms, use it more efficiently, thus allowing increased stocking rates, better animal performance and reduce costs. Nationally, the number of lambs reared per ewe joined is 1.3 and has remained at this level for decades. This is low by UK standards (1.5) and there is therefore significant scope to improve output. Teagasc is strongly committed to its sheep research and advisory programmes. The new Research Demonstration Flock at Athenry, the expanded BETTER Sheep Farm Programme, and the recent appointment of a Head of Sheep Programme to be shortly followed by the appointment of a Specialist in the North East will accelerate the transfer of technologies from research to the industry. The increased collaboration between Teagasc, UCD, Department of Agriculture, Food and the Marine and Sheep Ireland will further benefit the sheep industry.

I would like to express my gratitude to all of the national and international speakers who contributed both oral and written presentations. This book collates a significant body of knowledge on technical issues in sheep production and should prove an invaluable reference to sheep producers. I would like to thank all the Teagasc Staff who assisted with the organisation of the National Sheep Conference and especially thank the organising committee without whose efforts we would not be here today – they are; Michael Diskin, Frank Hynes, Phil Creighton and Michael Gottstein

Director, Teagasc

Acknowledgements

I wish to thank the following for their written contributions to this publication.:

Mike Taylor,
Barbara Good
Catherine O'Leary,
Frank Hynes
Tommy Boland
Philip Creighton
Terry Carroll
Gerry Murphy
Denis Lerouge
Declan Fennell
James Murphy
Michael Gottstein

I also wish to thank the following staff in the Public Relations Department, Teagasc, HQ.

Eric Donald
Therese Dempsey
Alison Maloney

I wish to acknowledge the generous sponsorship given by our sponsors towards this conference

MSD – Animal Health
Connolly's Red Mills
Connacht Gold

Michael G Diskin
Sheep Enterprise Leader,
February 2013

Anthelmintic Resistance and Worm Control in Sheep

Professor Mike Taylor,

VParst Ltd, Maple House Dawson Road, Market Weighton, UK

Introduction

Infections with gastrointestinal roundworms are an important cause of production losses in sheep. Worm control is a vital part of health and production management in sheep flocks, and good control is highly dependent on effective worming products. Unfortunately, a direct and unavoidable consequence of using wormers (anthelmintics) to control worm populations is selection for individuals that are resistant to the chemicals used.

If left unchecked, anthelmintic resistance (AR) could prove to be one of the biggest challenges to sheep production and animal welfare. As a consequence of increasing reports of AR in sheep in Britain, a working group "SCOPS" (sustainable control of parasites in sheep) was formed in 2003 with representatives from the sheep industry to promote practical guidelines for sheep farmers and their advisers. This led to the production of guidelines for 'sustainable worm control strategies for sheep' aimed at vets and advisers now in the 4th Edition, and on-going promotional literature aimed at farmers (Abbott et al. 2012).

The routine use of highly effective wormers, and where possible, grazing management, has controlled worms very successfully in the majority of sheep flocks. In recent years, however, the prevalence of anthelmintic resistance (AR) in Britain has risen sharply and an increasing number of flocks are finding that one or more of the chemical groups are no longer effective against some worm species. Recent reports from Ireland suggest AR is also an emerging problem in Irish sheep flocks.

Worms Affecting Sheep

There are more than 20 species of nematodes that infect sheep, which collectively are the cause of parasitic gastroenteritis (PGE). The worms of importance belong mainly to the genera *Teladorsagia*, *Cooperia*, *Trichostrongylus*, *Haemonchus*, and *Nematodirus*. *Teladorsagia* infections are most commonly seen in young lambs during the summer whereas *Trichostrongylus* infections are more often a problem in store lambs in the autumn and winter months. Infection with the parasite *Nematodirus battus*, is an example of a parasitic disease where the principle pathogenic effect is attributable to the larval stages. Infection with this species of worm is a major cause of PGE and death in lambs mainly in the spring.

Anthelmintic Resistance

A wide range of worming products is available for the control of PGE and can be used for both treatment and prevention. Available wormers have either a broad or narrow spectrum of activity and are classified based on structure and mode of action. Broad-spectrum wormers, have until fairly recently, been highly effective against the common species of gastrointestinal worms. Unfortunately, a direct and unavoidable consequence of using wormers to control worm populations is selection for individuals that are resistant to the chemicals used. AR is a global problem that poses a significant threat to the production and welfare of grazing livestock. The emergence of resistance to all three main anthelmintic groups and recent accounts of multiple-

resistance in nematode species is of major concern. Studies in Britain and more recently in the Republic of Ireland and Northern Ireland have highlighted issues with AR to the three main broad-spectrum anthelmintic groups – the benzimidazoles (BZ-1), levamisole (LV-2) and the macrocyclic lactones (ML-3).

Resistance is a heritable ability of the parasite to tolerate a normally effective dose of a wormer although 'resistant' worms can often be removed by exposure to higher dose rates of the drug up to the maximum tolerated dose. Wormers will continue to give continue responses in parasitised sheep and consequently farmers may not be aware that AR is present although significant production losses from poor worm control may have occurred, and additionally resistance can be expected to become more severe quite rapidly if the wormer remains in use.

The genes that allow parasites to become resistant are believed to pre-exist in unselected worm populations not previously exposed to the wormer. Once a wormer is introduced, selection for resistance is an inevitable consequence (see Fig 1.). Some elements of current worm control strategies are highly selective for AR. If the progress of AR is to be slowed, it is important that the current worming strategies are revised in an attempt to reduce the selection pressure for AR, and to change farmer practices and attitudes accordingly. As a consequence of these observations and concerns, the SCOPS guidelines were developed in Britain aimed at reducing the selection pressure for AR. To achieve effective worm control, it is important to provide advice on available parasite treatments and product selection, whilst at the same time encouraging reduced dependence on anthelmintic wormers through improved husbandry and management techniques.

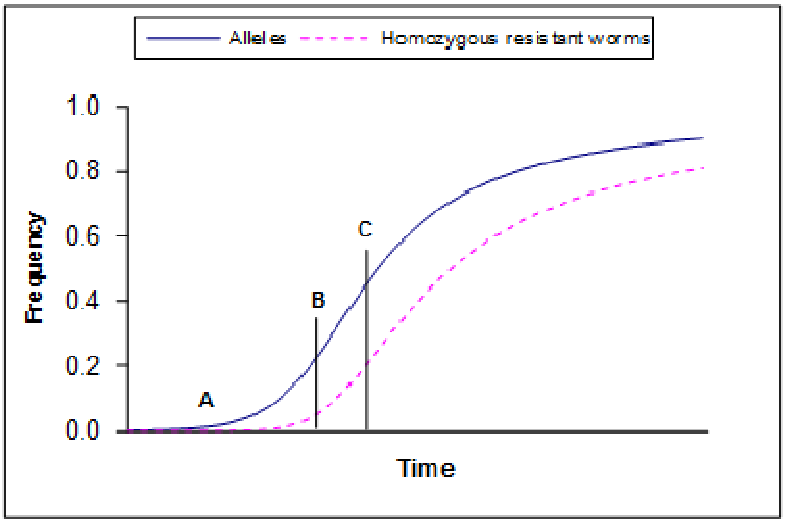


Fig 1. The rate at which resistance appears in a flock. Point A, resistance alleles are at very low levels; B, resistance detectable in tests; C, resistance apparent as a clinical problem

The routine use of highly effective wormers together with grazing management has controlled worms very successfully in the majority of sheep flocks for nearly 40 years. In recent years, however, it has become evident that the prevalence of AR in Britain has risen sharply. Studies in Scotland since 2000 have shown an increase in BZ resistance from a level of just over 20% incidence in 1991 to 80% prevalence on lowland farms and 55% on upland and hill farms (Bartley et al., 2004). In Wales, a study conducted in 2005 showed that 83% of all farms tested had detectable anthelmintic resistance. BZ-resistance was present on 80% of

farms tested, and more common on Hill/Upland farms (49%) compared to lowland farms (32%) with some regional variations. Both BZ and LV resistance was present in 47% of lowland and 29% Upland/Hill flocks tested (Worm Watch Wales 2006). Recent studies in both England and Wales indicate that resistance to the BZ group can be detected on nearly 100% of lowland farms and 83% of Upland/Hill farms. LV resistance was detected on 47% of lowland farms and 17% of Hill/Upland farms, all of which also had BZ resistance (Abbott et al., 2009). More recently there have been a number of reports of ML-resistance in Scotland, England and Wales and cases of "triple" resistance to all three main wormer classes (Blake and Coles, 2007; Sargison et al., 2007; Taylor et al., 2009).

SCOPS Guidelines

A summary of the SCOPS guidelines are presented in Table 1.

Table 1. SCOPS guidelines

Guideline	Comment
1. Work out a control strategy with your veterinarian or adviser	Decisions about the judicious use of wormers in worm control programs are complex, and will require on-going consultations
2. Use effective quarantine strategies to prevent the importation of resistant worms in introduced sheep and goats	Introduction of resistance alleles is considered a major cause of AR
3. Test for AR on your farm	It is fundamental that sheep farmers know which products (chemical groups) are effective in their flocks
4. Administer wormers effectively	Administer the right dose in the correct way, and exploit opportunities to enhance drug efficacy to ensure maximum kill rates
5. Use wormers only when necessary	Understand the trade-off between tolerating some level of parasitism and minimising selection for AR. FEC (Faecal Egg Count) monitoring has an important role
6. Select the appropriate wormer for the task	Consider narrow spectrum treatments whenever possible. Use rotations in appropriate ways
7. Adopt strategies to preserve susceptible worms on the farm	Aim to reduce the heavy selection for AR when treating immune sheep or when dosing on to low contamination pastures
8. Reduce dependence on wormer	Alternative control measures include grazing management, risk assessment of pasture infectivity

Anthelmintic Resistance in Ireland

Studies in both the Republic of Ireland and Northern Ireland have highlighted issues with AR to the BZ, LV and ML groups of wormers. Good et al. (2007) using in vitro tests on commercial flocks determined that 95% had BZ resistance and 48% had resistance to LV. In a national survey in Northern Ireland in 2011, treatment efficacy below 95%, indicating significant resistance, was

detected in 81% of flocks tested for BZ resistance; in 14% of flocks tested for LV resistance; and in 50% and 62% of flocks tested for avermectin and milbemycin resistance, respectively. (McMahon et al 2013).

Anthelmintic Failure

Anthelmintic is not the only reason why wormers sometimes appear to have failed to control parasitic infections. Other factors listed below can lead to apparent wormer treatment failures.

Table 2. Potential causes of wormer treatment failures

Underdosing	• Underestimation of bodyweight • Inadequate maintenance of equipment • Poor treatment techniques • Failure to follow manufacturer's instructions • Incorrect storage of product
Incorrect wormer choice	
Re-introduction onto contaminated pastures	

Developing Worm Control Strategies

Worm control strategies currently employed in most sheep flocks are based on a defined or blueprint approach. These have the advantage of being easy to plan and record, are relatively cheap and historically, have been effective. Treatment strategies for the control of PGE are targeted at both the ewe and the lamb. On farms where clean grazing in the form of new leys, or aftermaths, are available a combination of worming and grazing management may be employed.

The increase in reports of anthelmintic resistance worldwide (Wolstenholme et al. 2004; Papadoupoulos 2008) now require the development of control strategies that optimise the use of wormers but at the same time reduce the risk of further development of AR. If the progress of AR is to be slowed, it is important that current worming strategies are revised in an attempt to reduce the selection pressure for AR, and to change farmer practices and attitudes accordingly. To continue to achieve effective worm control, it is important to provide advice on available parasite treatments and product selection, whilst at the same time encouraging reduced dependence on the use of wormers through improved husbandry and management techniques. With the recent introduction of two new actives monepantel, (4-AD), and derquantel (5-SI), it has also become increasingly to integrate these new actives in accordance with current guidelines on the sustainable use of wormers.

Developing cost-effective, reliable and sustainable control strategies in the face of wormer resistance is not, however, straightforward and is becoming increasingly more complicated. On-going consultations and farm planning between farmers and their vets will be needed to combat the threat that resistance poses. The

objective of management practices is to minimise the reliance and use on wormer treatments by avoiding levels of parasite exposure that would lead to clinical disease and production losses. At the same time, management and sheep husbandry systems need to allow sheep to build up immunity to the parasites if they remain on the farm after their first grazing season. To achieve these objectives, it is necessary to develop a greater understanding of the parasite risks from pastures and relate these to the management and monitoring tools available to the farmer.

It should not be forgotten that sheep are also infected with a range of other parasites, and as such, there is a need to devise complete parasite control programmes specific to each farm enterprise requiring monitoring of on-farm parasite populations, and then integration of the various control parasite control strategies to prevent the associated disease-risks. Part of this control approach, will be the need to provide "best practice" advice on available parasite treatments and product selection, whilst at the same time encourage reduced dependence on parasite treatments through improved husbandry and management techniques.

References

Abbott, K. A., Taylor, M. A. and Stubbings, L. A. (2012). Sustainable Worm Control Strategies for Sheep: A Technical Manual for Veterinary Surgeons and Advisers SCOPS, 4th edition. Context Publishing. www.scops.org.uk

Bartley, D.J., Jackson, F., Jackson, E., Sargison, N.D., 2004. Characterisation of two triple resistant field isolates of *Teladorsagia* from Scottish lowland sheep farms. Veterinary Parasitology 23, 189-199.

Blake, N., Coles, G., 2007. Flock cull due to anthelmintic-resistant nematodes. Veterinary Record 161, 36.

Good B., Patten, T., Hanrahan, J.P.. Waal, D.T. (2007). The current status of anthelmintic resistance in Ireland. Poster: 21st Internation Conference, World Association of Veterinary Parasitology (WAAVP), Ghent, Belgium. 19th-23rd August 2007.

McMahon C., Bartley D.J., Edgar H.W.J., Ellison S.E., Barley J.P., Malone F.E., Hanna R.E.B., Brennan G.P., Fairweather I. (2013). Anthelmintic in Northern Ireland (1); prevalence of resistance in ovine gastrointestinal nematodes, as determined through feacal egg count reduction testing. Veterinary Parasitology http://dx.doi.org/10.1016/j.vetpar.2013.01.006 (accessed 25 January 2013).

Papadopoulos, E., 2008. Anthelmintic resistance in sheep nematodes. Small Ruminant Research 76, 99–103.

Sargison, N.D., Jackson, F., Bartley, D.J., Wilson, D.J., Stenhouse, L.J., Penny, C.D., 2007. Observations on the emergence of multiple anthelmintic resistance in sheep flocks in the south-east of Scotland. Veterinary Parasitology 145, 65-76.

Taylor, M.A., Learmount, J., Lunn, E., Morgan, C., Craig, B. 2009. Multiple resistance to anthelmintics in sheep nematodes and comparison of methods used for their detection. Journal of Small Ruminant Research 86, 67-70.

Wolstenholme, A.J., Fairweather, I., Prichard, R., von Samson-Himmelstjerna, G., Sangster, N.C., 2004. Drug resistance in veterinary helminths. Trends in Parasitology 20, 469–476.

Worm Watch Wales (2006). Wormer Resistance "The Need for Change". Hybu Cig Cymru - Meat Promotion Wales, Aberystwyth. www.hccmpw.org.uk

Eradication and Control of Lameness in Sheep

Catherine O'Leary MVB, MRCVS, Cert CSM,
MSD Animal Health

What conditions cause lameness?

The conditions which cause lameness in sheep in Ireland, are Scald (Interdigital Dermatitis), Shelly Hoof, Footrot, Contagious Ovine Digital Dermatitis (CODD) and Toe Granuloma. Knowing what is causing the lameness on your farm is critical. You can't control the problem if you don't know what the problem is. An accurate diagnosis is essential for success. Seek advice from your local vet if you are unsure as to what is causing the lameness.

Scald

Scald is caused by a bacterium called Fusobacterium necrophorum. F. necrophorum is found in the intestines of ruminants and is passed in manure. Infection occurs through damaged skin. When the interdigital space is exposed to excoriation, trauma or wet conditions the F.necrophorum proliferate and cause scald or interdigital dermatitis. On examination the interdigital space is inflamed (red/pink) and moist with loss of hair. There is no smell and no involvement of the horn of the hoof.

Footrot

Footrot occurs where scald is already established and the sheep comes in contact with a second bacterium called Dichelobacter nodosus. Dichelobacter possesses toxic factors which result in under-running of the horn from the heel forward. Disease is associated with a characteristic pungent odour. Footrot is a sheep to sheep disease and control and prevention must focus on a whole flock health plan.

CODD

Contagious Ovine Digital Dermatitis was first reported in the UK in 1997. The cause of this disease remains unconfirmed but it is thought to be due to a spirochaete, probably of the Treponema spp. Furthermore, it was suggested that there may be a link with Digital Dermatitis of cattle, which may be important in epidemiology and control. It causes a high level of disease when it first enters a flock with up to 50 % of the flock becoming lame. The pathology in this disease results in under-running of the hoof wall starting at the coronary band and progressing downwards, and ultimately separation of the entire hoof capsule. The condition seems to respond to antibiotics. However further research is required on the exact cause of this disease before it may be successfully controlled.

What Options are Available for Control of Lameness on Farm?

Once you have a diagnosis as to the cause of the lameness the next step is to assess the level of lameness on the farm. Count how many sheep are lame. The target is to get the level of lameness to less than 5%. Control options can be summarised in the letter series "RSTUV" – the ABC of lameness control on farm. Depending on the cause of the lameness individual aspects of the plan will need to be altered to make them farm specific.

Remove Chronics

Any sheep that has repeated bouts of lameness should be culled. Some sheep can be chronic carriers of footrot and will not respond to treatment. These sheep should be tagged and culled as they are an ongoing source of infection for the rest of the flock. Footrot is mainly a sheep to sheep disease and infection is maintained in the flock on the hooves of these sheep.

Segregate

a) Brought-ins: It is important to have a purchase policy in place on farm. The most common way that footrot and CODD enter a farm is on an infected sheep. Segregation of all sheep on arrival on farm (quarantine) and maintaining them separate from the main flock for at least 28 days is essential. Examination of their feet repeatedly during this time and foot-bathing or treatment should be conducted as necessary.

b) Diseased sheep: Segregation of diseased sheep is another critical control step. All lame sheep should be isolated and maintained as a separate group and treated accordingly.

Treat Clinical Cases Promptly

Clinical cases of lameness should be promptly isolated and treated. Farmers that treat lameness within three days have a greater success rate and significantly lower flock incidence. Treatments options include the following:

a) Paring

Paring should only be carried out on lame sheep and where there is a benefit from doing so. Routine foot paring of the whole flock has been adversely associated with a higher level of footrot.

b) Footbathing

This is a very important part of any lameness control programme. Footbathing can be an effective treatment for scald however its role in footrot is in helping with control and prevention. For footrot formalin and zinc sulphate are the solutions of choice. There is no evidence that one of these formulations is more effective than the other. Use solutions at concentrations recommended by manufacturer. Stand sheep on clean, dry surface for at least one hour afterwards. Turn sheep out onto a field that has been sheep free for at least two weeks. In the case of CODD there are no licensed footbath treatments. However antibiotic footbaths have been used in early cases of CODD with some success. Refer to your vet for advice on treatment.

c) Topical Antibiotics

Oxytetracycline spray is effective for scald. It is important that the animal is kept standing on a dry area for one hour after such treatment.

d) Parenteral Antibiotics.

A study of UK farmers in 2005 found that only 12% of farmers always treat footrot with an antibiotic and 44% never include antibiotics in the treatment regime. This is an item of concern as footrot is an infectious disease and antibiotic injections are now considered to be the preferred method of treating cases of footrot.

The most successful treatment for footrot is long-acting oxytetracycline, plus removal of debris and application of oxytetracycline spray. There is no benefit in treating cases of scald with parenteral antibiotics as it is a superficial infection and so will respond better to topical antibiotic sprays.

Understanding the epidemiology of the disease and the farm specific circumstances Take precautions to avoid the spread of infection. Gathering sheep for footbathing can be counterproductive if the handling facilities are inadequate. Inappropriate management (hygiene of handling facilities, muddy tracks and damp pastures) can encourage spread of infection. Any lameness plan must be farm-specific and consider the agent(s) and the facilities.

Vaccinate

Footvax, manufactured by MSD Animal Health, is a vaccine specifically licensed for the treatment and prevention of footrot. Used correctly, this vaccine is an important part of successful footrot control. Footvax contains 10 strains of Dichelobacter nodosus. However, vaccination should be viewed as one aspect a control programme for footrot, not an all-in-one solution. Used in combination with other aspects highlighted above it has been found to be very effective. There are no vaccines currently available against Scald or CODD.

Conclusions

- Find out the cause of the lameness in your flock.
- Find out the level of lameness within your flock.
- Adapt the control measures to make them specific to your farm.
- Seek professional advice/help from your vet/farm adviser.

A SURVEY OF LAMENESS IN SHEEP

In the table below we describe the common lesions (abnormalities) seen on feet and provide a photograph. For each condition please tick the box to tell us what you call this lesion

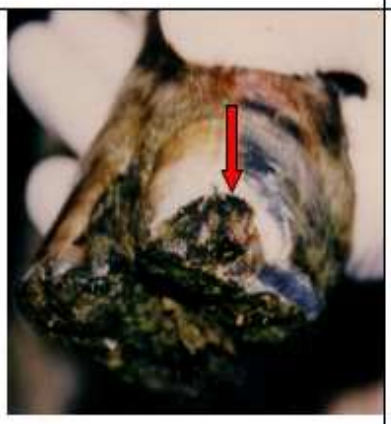
What you might see when you look at the foot	Photograph	*What do you call this lesion*
• Red, wet interdigital space • May be grey pasty scum • Loss of hair in interdigital space		☐ *Foot rot* ☐ *Scald* ☐ *Shelly hoof* ☐ *Foot abscess* ☐ *CODD** ☐ *Toe granuloma* ☐ *Other*_____
• Some separation of horn from underlying live foot • Foul smelling blackish slimy dead tissue		☐ *Foot rot* ☐ *Scald* ☐ *Shelly hoof* ☐ *Foot abscess* ☐ *CODD** ☐ *Toe granuloma* ☐ *Other*_____
• Abnormal at coronary band (hair line) • Loss of hair above coronary band • No interdigital space lesion • There may be complete detachment of hoof		☐ *Foot rot* ☐ *Scald* ☐ *Shelly hoof* ☐ *Foot abscess* ☐ *CODD** ☐ *Toe granuloma* ☐ *Other*_____

*CODD- Contagious ovine digital dermatitis

Types of lameness continued...

1

with kind permission of Jasmeet Kaler, University of Warwick

What you might see when you look at the foot	Photograph	What do you call this lesion
• Some separation of horn from the wall, may or may not see pus • A pocket impacted with soil • Half- moon appearance		☐ Foot rot ☐ Scald ☐ Shelly hoof ☐ Foot abscess ☐ CODD* ☐ Toe granuloma ☐ Other_____
• Pus comes from the foot • Sheep is very lame • Hoof tissue normal • No odour • Swelling of skin above foot		☐ Foot rot ☐ Scald ☐ Shelly hoof ☐ Foot abscess ☐ CODD* ☐ Toe granuloma ☐ Other_____
• Strawberry- like growth at the toe • Bleeds when handled		☐ Foot rot ☐ Scald ☐ Shelly hoof ☐ Foot abscess ☐ CODD* ☐ Toe granuloma ☐ Other_____

*CODD- Contagious ovine digital dermatitis

Thank you very much for participation in this quiz

2

with kind permission of Jasmeet Kaler, University of Warwick

References

Conington, J., L. Nicoll, et al. (2010). "Characterisation of white line degeneration in sheep and evidence for genetic influences on its occurrence." Vet Res Commun 34(5): 481-489.

Duncan, J. S., D. Grove-White, et al. (2012). "Impact of footrot vaccination and antibiotic therapy on footrot and contagious ovine digital dermatitis." Vet Rec.

Green, L. E., G. J. Wassink, et al. (2007). "Looking after the individual to reduce disease in the flock: a binomial mixed effects model investigating the impact of individual sheep management of footrot and interdigital dermatitis in a prospective longitudinal study on one farm." Prev Vet Med 78(2): 172-178.

Grogono-Thomas, R. (1997). "Virulent foot rot in sheep." Vet Rec 141(1): 26-27.

Harwood, D. G. and J. H. Cattell (1997). "Virulent foot rot in sheep." Vet Rec 141(3): 83.

Kaler, J., S. L. Daniels, et al. (2010). "Randomized clinical trial of long-acting oxytetracycline, foot trimming, and flunixine meglumine on time to recovery in sheep with footrot." J Vet Intern Med 24(2): 420-425.

Kaler, J. and L. E. Green (2008). "Naming and recognition of six foot lesions of sheep using written and pictorial information: a study of 809 English sheep farmers." Prev Vet Med 83(1): 52-64.

Lynch, C. O. and Hanrahan, J. P.(2011). The incidence and extent of foot problems in sheep. Agricultural Research Forum.

Sayers, G., P. X. Marques, et al. (2009). "Identification of spirochetes associated with contagious ovine digital dermatitis." J Clin Microbiol 47(4): 1199-1201.

Wassink, G. J., T. R. George, et al. (2010). "Footrot and interdigital dermatitis in sheep: farmer satisfaction with current management, their ideal management and sources used to adopt new strategies." Prev Vet Med 96(1-2): 65-73.

Wassink, G. J., L. J. Moore, et al. (2005). "Footrot and interdigital dermatitis in sheep: farmers' practices, opinions and attitudes." Vet Rec 157(24): 761-765.

Wassink, G. J., Gorgono-Thomas, R., Moore, L. J. and Green, L. E. 2003. "Risk factors associated with the prevalence of footrot in sheep from 1999 to 2000." Vet Rec 152 : 351-358.

Winter, A. (2004). Lameness in sheep: 1. Diagnosis. In Practice: 58-63.

Winter, A. (2004). Lameness in sheep: 2. Treatment and Control. In Practice: 130-139.

Winter, A. C. (2011). "Treatment and control of hoof disorders in sheep and goats." Vet Clin North Am Food Anim Pract 27(1): 187-192.

Winter, A. (1997). Treatment of toe granuloma in sheep. In Practice: 17: 214-215

Concentrate Supplementation of Pregnant Ewes with an Emphasis on Late Pregnancy Nutrition

Frank Hynes,

Sheep Specialist, Animal and Grassland Research & Innovation Centre,

Teagasc, Mellows Campus, Athenry, Co. Galway.

In late pregnancy nutrients are required for ewe maintenance, to provide for the growing foetus or foetuses, for udder development and the build up of colostrum. Approximately 70% of foetal growth occurs during the final 6 weeks of pregnancy. The growing foetus greatly increases the ewe's requirement for nutrients. Whether ewes are housed and fed indoors or fed outdoors, ensuring nutrition is adequate will lead to more lambs born alive, healthier lambs and a healthy ewe fit to rear her lambs. This paper discusses the nutrition of pregnant ewes with an emphasis on late pregnancy nutrition.

Early and Mid Pregnancy

For the first three to four weeks after mating the objective is to provide adequate nutrition to ensure the fertilised egg becomes attached to the wall of the uterus. For the next eight to nine weeks the objective is to ensure the placenta develops to its maximum size. It is through the placenta that the growing lambs will receive their nutrients until birth. Therefore, adequate nutrition will lead to good lamb birth weights. Ewes should not gain or lose much weight during this period as it leads to reduced placental growth, thereby, reducing lamb birth weight. If ewes are in good condition at the start of this period, they may be allowed lose up to 5% of body weight. This management will still leave the ewe well set up to enter late pregnancy in good condition with a target body condition score of 3.

Late Pregnancy

Ewes underfed in late pregnancy produce lambs with low reserves of brown fat used specifically for protection against hypothermia (Vipond et Al., 2009). This will leave lambs vulnerable to harsh weather conditions. Failure to meet the nutritional requirements during late pregnancy will lead to significant problems at and subsequent to lambing including.

Light or weak lambs at birth

- Ewes short of colostrum
- Higher ewe and lamb mortality
- Ewes become thin
- Lower lactation milk yield
- Increased metabolic diseases in ewes
- Lambs subsequently light at weaning time

Other problems could become an issue such as prolapsed vagina or twin lambs disease. By ensuring ewes are properly fed many of these problems can be reduced and much extra work avoided.

Energy

Energy is the main ingredient that needs to be addressed. Energy is measured in units. One unit of energy is called a UFL and 1 kg of barley (as fed) supplies 1 UFL of energy. All other ingredients are given a rating relative to this. Energy requirements of a 70 kg ewe at various stages throughout the year are presented in Table 1.

Table 1. Energy requirements of a 70 kg twin bearing ewe at various stages throughout the year

	Dry	6 – 5 wks pre lambing	4 – 3 wks pre lambing	2 – 1 wks pre lambing	1 – 6 wks post lambing
Energy					
UFL/ day	0.80	0.90	1.09	1.37	2.50

O'Mara (2000)

A 70 kg ewe, either dry or in early pregnancy requires approximately 0.80 UFL for maintenance alone. However, this requirement increases to 1.37 UFL of net energy in late pregnancy for a ewe carrying twins. The extra energy is needed for the rapidly growing foetus. This occurs at a time when rumen capacity is reduced due to contents of the pregnant uterus occupying a greater proportion of body cavity. Even when silage or hay is of excellent quality it cannot supply all the necessary nutrients as ewe intake is restricted. In most situations, concentrate supplementation is needed to supply the ewe with a balanced diet. This energy will typically be supplied by a combination of silage plus some concentrates.

Protein

Traditionally, when farmers talk about a ration they talk about the protein percentage. Crude protein requirements for a 70 kg ewe throughout the year are presented in Table 2. For the dry period, mating and mid pregnancy crude protein is not normally limiting. There are usually sufficient quantities of protein available from the grass during these periods. Furthermore, in mid pregnancy, if silage is the main forage being fed and, provided silage quality is reasonably good (> 70% DMD) with a good protein percentage (>12% CP), no further supplementation apart from minerals is necessary. However, for in-lamb ewes, the crude protein percentage becomes a very important issue in the final 3 to 4 weeks before lambing. Requirements increase from a 130g protein per day for a ewe in early and mid-pregnancy, to over 200g per day in late pregnancy. If it is not supplied at this stage udder development will be restricted and this will negatively impact of colostrum supply and subsequent milk supply for the newborn lambs. While a ration

with 16% - 18% crude protein may be adequate in circumstances of good quality hay or silage, a higher protein ration will be necessary when roughage quality is poor. This is to compensate for the low level of protein content in the forage as well as the reduced forage intake due to poor intake characteristics of the forage. As prolificacy increases, this becomes more important to ensure an adequate milk supply for the extra newborn lambs. Feeding a 19, 20 or 21% protein may be necessary.

Table 2. Crude protein requirements of a 70 kg twin bearing ewe at various stages throughout the year

	Dry	At Mating	1st 15 wks gestation	Last 4 wks gestation	Early lactation	Late lactation
CP (g)	113	164	130	214	420	334

NRC, (1985)

In Ireland average flock size is small with an average size of 103, (DAFM, 2012). Therefore, on many farms the overall quantities of meal will not exceed a few tonnes. In such circumstances it may be more appropriate to start with the same ration that will be fed right up to lambing. This avoids having to make changes a few weeks prior to lambing.

Feed Ingredients

When purchasing a ration the ingredients and their inclusion levels are most important. High quality ingredients that are high in energy include cereals such as barley, wheat or maize. Pulps, either citrus or beet pulp are also high in energy and are very palatable. These have an energy rating of approximately 1 UFL per kg as fed. While oats has slightly less energy than the above, it is a good quality feed and due to extra fibre is a safe ingredient to include in a ewe ration. Soya hulls have become popular in recent years and are a reasonably good source of energy. However, the net energy is only approximately 80% of barley. As wheat is very high in starch ideally it should not be included at over 20% of the mix. High levels of starch, particularly when large quantities of concentrate are being fed can easily give rise to acidosis. The pulp and hulls are high in fibre and low in starch, making them very safe ingredients, and ideal for mixing with more starchy barley and wheat.

Similarly, the protein source is important. While maize gluten and distillers grains are reasonably good quality (they have good energy and protein concentrations), they may contain high levels of copper and, therefore, should not be included at levels above 30%. The protein percentage of gluten may also vary somewhat. Rapeseed meal is a high protein feed but is a little low on energy concentration. Furthermore, there may be palatability issues with rapeseed. On the other hand, soyabean meal is probably the most ideal source of protein and is an ideal ingredient for pregnant ewes.

There are two main types of protein that are fed to sheep. Rumen Degradable Protein (RDP) is broken down in the rumen. It is required by the rumen bacteria to enable them to break down forage in the diet. Digestible Undegradable Protein (DUP) is not broken down in the rumen (bypasses the rumen). It is broken down in the gut and its amino acids are absorbed directly from the gut. In late pregnancy DUP is essential for udder development and milk production. Soyabean meal is rich in DUP.

Athenry Study

In a study undertaken at Athenry the effects of source of concentrate protein, and concentrate feed level on the performance of ewes in late pregnancy and the performance of their progeny were evaluated (Keady, 2013). Twin and triplet bearing ewes in late pregnancy were offered either low or high concentrate feed levels (low 16 and 21 kg for twins and triplet bearing ewes, respectively, or high 28 and 32 kg for twin and triplet bearing ewes, respectively). Two concentrates formulated using two different sources of protein, namely soyabean meal and by-products were offered. Rapeseed meal, distillers grains and maize gluten feed were the main protein sources in the by-product-based concentrate. The concentrates were formulated to have similar protein and energy concentrations. The ewes were housed in early December, shorn and offered grass silage (DMD 74%) ad-lib until lambing.

Lamb birth weight increased by 0.36 kg and lamb live weight gain from birth to 5 weeks increased by 22 g/day with the soyabean meal based concentrate compared with the by-product based concentrate. Subsequently, lambs from ewes offered the soyabean based concentrate were 0.8 kg heavier at weaning. Keady (2013) concluded that altering the protein source in the concentrate offered to ewes in late pregnancy, had a greater effect on lamb performance than increasing concentrate feed level by 75% for twin bearing ewes and concluded that concentrate ingredient composition is more important than feed level.

Silage Quality

Quality of silage fed has a significant bearing on animal performance and the level of concentrate supplementation required. Silage Dry Matter Digestibility (DMD) is the most important factor in assessing silage quality. The higher the DMD the higher the energy content of the silage will be. Increasing silage digestibility, from 73% DMD to 79% DMD, when offered at similar levels of concentrates, increased ewe live weight post lambing by 12.2kg, lamb birth weight by 0.55 kg and lamb weaning weight by 1.8kg (Keady, 2012). The increase in lamb weaning weight subsequently reduced age to slaughter by approximately two weeks (Keady, 2012). The energy levels of silage of different DMDs and for hay are presented in Table 3.

For silage of 72% DMD, a 70kg ewe in mid pregnancy and carrying twin lambs will eat approximately 1kg of silage dry matter. This will supply sufficient energy to meet her demands (Table 1 above). However, as DMD decreases, the lower energy content per kg DM coupled with a reduced intake will lead to under-nutrition and a need to provide supplementary feeding in the form of concentrates. The lower the DMD of the silage the greater will be the supplementation level required. During late pregnancy, as the growing foetus and fluids associated with pregnancy occupy a greater proportion of the cavity space in the pregnant

ewe, the ewe's ability to consume these feeds is reduced further. Therefore, ensuring the concentrate fed is properly balanced becomes more critical.

Table 3. The energy levels in UFL per kg dry matter of silage of different DMDs and hay

Grass Silage/Hay	UFL(per kg DM)
77% DMD	0.87
72% DMD	0.81
68% DMD	0.76
64% DMD	0.71
60% DMD	0.66
56% DMD	0.61
Good Hay (60 DMD)	0.69
Poor hay (52 DMD)	0.58

Kavanagh (2012) report on the quality of the first cut silage crop of 2012, highlights that the quality of silage available for the 2012/2013 winter is inferior on many farms. A summary of the results of these samples is presented in Table 4.

Table 4. Results of silage survey results for first cut silage samples analysed in August 2012

	All samples (n=105)	Pit silage	Bale silage
DM%	25.3 (15 - 61)	23.7 (16 - 48)	29.7 (15 - 62)
pH	4.3 (3.75 - 5.08)	4.2 (3.75 - 5.08)	4.5 (3.88 - 4.96)
Ammonia %NH3	8.4 (5 - 20)	8.1 (5 - 20)	8.9 (5 -17)
Crude Protein %	9.7 (7 – 14)	9.6 (8 - 13.6)	9.7 (8-13.5)
DMD %	64.1 (52 - 80)	64 (52 - 77)	64 (52 – 80)

One quarter of all samples had a DMD less than 60% and 8% of all samples were less than 55% DMD. In many cases protein levels were also disappointing, with an average crude protein of 9.7% compared with a target of 12 to 14%. Some of the silages also have a high pH indicating preservation is less than desirable. These results have significant implications for feeding regimes adopted this winter and spring.

During the silage making season of 2012, weather conditions played a large part. In addition to grass being harvested late in many cases leading to low digestibility and low crude protein content among other things,

soil contamination was frequently a problem. This has been confirmed by high levels of ash in many silage samples analysed. Soil contamination leads to high levels of bacteria including Listeria, creating a real risk of causing Listeriosis leading to ewes aborting. This silage is not suitable for feeding to pregnant ewes.

Feed Programme

Based on all of the factors above a feed programme should be prepared for ewes in late pregnancy. Meal feeding levels for ewes carrying twins when silage is fed ad-libitum are presented in Table 5. These levels can be reduced by about 30% for ewes carrying singles and increased by about 30% for ewes pregnant with triplets. When ewes are scanned, use should be made of the results with the flock divided according to litter size.

Table 5. Concentrate-feed Levels (kg) for 70 kg Ewes in Good Condition Carrying Twins

Roughage Quality	Works Pre-Lambing Concentrates kg / hd /day					Total Kg
	10-9	8-7	6-5	4-3	2-1	
75% DMD	0	0	0.1	0.4	0.6	20
70% DMD	0	0.1	0.3	0.5	0.7	28
65% DMD	0.1	0.2	0.4	0.6	0.8	35
60% DMD	0.1	0.3	0.6	0.8	1.0	46
55% DMD	0.4	0.5	0.8	1.1	1.4	70

Silage quality has a significant bearing on the feeding programme. Silage should be analysed before preparing a feed plan. When silage quality is good as indicated by a high DMD, meal feeding can be delayed and levels fed can be reduced compared with low DMD silage. The total kilograms of concentrates as presented in Table 5 reflect requirements in a compact lambing system. When there is a long lambing spread, these levels will increase. However, some savings can be made if ewes were grouped according to lambing date. Furthermore, Keady (2012) has shown that further savings can be made when precision chop silage is used. For silages of 79 and 65% DMD an additional 4 and 10kg concentrate are required for long chop silage relative to precision chop, respectively (Keady, 2012).

When silage quality is very poor, below 60% DMD, the concentrate feed levels required as presented in Table 5 are similar to the levels required in an all concentrate system. Concentrates can successfully replace silage as the main diet for ewes in late pregnancy (Flanagan, 2002; Boland et al., 2007 (1&2). Furthermore, when silage is scarce and the purchase price is high this option should be considered as it will be much easier predict performance than relying on performance from expensive inferior quality roughage. However, when concentrate prices are relatively high it is a less attractive option. When high concentrates levels are being

fed care must be taken to introduce meals gradually to avoid acidosis. Adequate trough space must be provided as well as a constant supply of clean water. When this is taken care of there should be no management or health problems.

Minerals / Vitamins

A mineral mix should be included in the compound at the rate of 2.5% or 25kg per tonne (See Paper by Boland 2013, these proceedings).

Other Management Issues

There are a number of other management issues that impact on the nutrition of the ewe in late gestation.

Water: A plentiful supply of fresh, clean water is critical. A ewe in late pregnancy will consume up to 6 litres of water per day when the feed being eaten is high in dry matter as in the case of an all concentrate diet. Water troughs should be checked regularly for contamination. This could be faeces, hay or silage or mouthfuls of feed in the water troughs. Special care must be taken in times of frost and snow.

Trough Space: Where meal is being fed, it is vital to ensure adequate trough space is available. For a standard bay, 4.8m wide, there is not enough space to feed more than 10 ewes, each approximately 70 kg in late pregnancy. Trough space requirements for different size ewes are outlined in Table 6.

Table 6. Trough Space Requirements for Housed In-Lamb ewes

Ewe Body Wt. Kg	Meal Trough Space mm	Silage Trough space mm
50	400	150
70	450 - 500	200
90	600	250

Conclusions

- Ewes must be properly fed in late pregnancy to provide for the growing foetus and prepare the ewe for lactation
- When silage or hay is being fed, supplementation with concentrates is required. The level of concentrates will be determined by number of lambs being carried by the ewe, ewe condition and quality of the roughage
- When silage is of extremely poor quality, with a DMD of below 60% or when silage is in short supply, consideration should be given to replacing silage with an all concentrate diet.
- Trough space and a plentiful supply clean fresh water must be provided to ensure adequate intake

Paying attention to these details can reward you financially and reduce your work load substantially

References:

Boland, T.M., Hayes, L., Murphy, J., Callan, J.J., and Crosby, T.F. 2007. The effects of offering a concentrate or grass silage based diet to twin bearing ewes in late pregnancy on ewe and lamb performance. Proceedings of the British Society of Animal Science, Winter Meeting, Southport, UK, 2-4 April 2007

Boland, T.M., Hayes, L., Murphy, Quinn, P.J. and Crosby, T.F. 2007. The effects of offering a concentrate or grass silage based diet to single, twin and triplet bearing ewes in late pregnancy on ewe performance. Proceedings of the British Society of Animal Science, Winter Meeting, Southport, UK, 2-4 April 2007

Department of Agriculture, Food and the Marine (DAFM), 2012 Ireland National Sheep and Goat Census December 2011

Flanagan, S. (2002) Easy Feeding of Housed Sheep End of Project Reports: Sheep Series No. 18 Project No. 4799 Sheep Research Centre, Athenry

Kavanagh, S. (2012) Silage survey results, 2012 Teagasc, Oak Park

Keady, T (2012) Nutrition in Late Pregnancy is the Foundation to Flock Productivity in Teagasc (2012) Technical Updates on Sheep Production Teagasc Oak Park

Keady, T. (2013) Protein source more N.B. than overall feed level. Soya bean meal Vs by-products (i.e. rapeseed meal, distillers grains and maize gluten feed.) Available online at: http://www.teagasc.ie/advisery/sheep/concentrate-protein.asp accessed 28th January 2013

NRC (National Research Council) (1985) Nutrient Requirements of Sheep National Academy Press, Washington, DC

O'Mara, F. A. (2000) A Net Energy System for Cattle and Sheep Version 1.2 University College, Dublin, Ireland

Vipond, J., Morgan, C. & McEvoy, T. (2009) Year round feeding the ewe for lifetime production Scottish Agricultural College (SAC)

Mineral Nutrition of Ewes and Lambs

Dr. Tommy Boland,

*L*ecturer in Ruminant Nutrition and Sheep Production,

School of Agriculture and Food Science, University College Dublin, Belfield, Dublin 4.
tommy.boland@ucd.ie

Introduction

Minerals are inorganic elements required by all forms of living matter for their normal life processes. Minerals in animal nutrition are often classified according to the amounts in which they are required by the animal. This classification results in the partitioning of minerals into major and trace (minor) elements. Minerals that are required in relatively large amounts are referred to as major elements and are required in concentrations of greater than 100 ppm, while trace elements are required at less than 100 ppm (McDowell, 2003). There is some dispute in the literature as to how many elements are essential to the higher forms of animal life. In a review, McDowell (2003) reported 29 elements as being required by at least some animal species, while Suttle (2010) indicated 22 elements were essential for the higher forms of animal life. These included the major elements calcium (Ca), phosphorous (P), potassium (K), sodium (Na), chlorine (Cl), magnesium (Mg) and sulphur (S) and the trace elements iron (Fe), iodine (I), zinc (Zn), copper (Cu), manganese (Mn), cobalt (Co), molybdenum (Mb), selenium (Se), chromium (Cr), tin (Sn) vanadium (Vn), fluorine (F), silicone (Si), nickel (Ni) arsenic (As). Aluminium (Al), boron (Br), cadmium (Cd), lithium (Li), lead (Pb) and rubidium (Rb), have subsequently been shown to improve growth or health in goats, oigs or poultry under certain specialized conditions leading to these elements being termed 'newer essential elements. Lee *et al.* (2002) reported that only a handful of trace elements are commonly responsible for nutritional problems that affect growth, milk production or fertility performance of sheep including Se, Co, Cu, Mo, I, Zn, Fe and Mn. The functions of minerals can be assigned to one of four categories, namely structural, physiological, catalytic and regulatory, with many elements being multi functional. Furthermore mineral nutrition is complicated by the huge number of interactions taking place (Figure 1.) between individual elements meaning secondary (induced) deficiencies as well as primary deficiencies frequently occur.

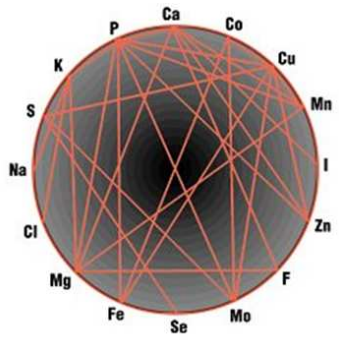


Figure 1. Interactions in mineral nutrition

Major Elements

Calcium

Ca is the most abundant mineral element in the animal body, the major function of which is to provide structure and support with 99% of all Ca found in the teeth and skeleton. The total body Ca content declines with age from approximately 1.6% in young cattle to 1% in adult animals although the 2:1 ratio of Ca to P in bone is rather constant. The major function of Ca as a constituent of bone is to give structure and support to the body while offering protection to the delicate internal organs The level of Ca in bone is not a constant value and mobilization of up to one-fifth of skeletal Ca is possible in late pregnancy in sheep (Braithwaite, 1983). Bone therefore acts as a store of Ca that can be utilised to overcome deficiency of supply in times of increased demand. Requirements for pregnant ewes rise rapidly in late pregnancy and reach a figure similar to that required by lactating ewes; it is unnecessary to try to meet requirements on a day to day basis and once a diet containing approximately 3 g Ca/kg DM is offered on a continuous basis no performance problems should be encountered given the animals ability to mobilise body reserves and increase absorption efficiency in times of increased demand. A wide range of Ca requirements has been quoted for sheep from 0.20 to 0.82 % of dietary DMI with a concentration of approximately 0.40 % for twin bearing ewes during late pregnancy (NRC, 1985). For ewes with a DMI of 1.3 kg for the last six weeks of pregnancy (Boland *et al*., 2004) this would indicate a Ca requirement of 5.2 g/d which is similar to the value of 5.33 g/d derived from the recommendations of the AFRC (1991) for twin bearing ewes on a high quality diet for the last four weeks of pregnancy.

Reports suggest that weaning lambs to a Ca deficient diet results in a loss of appetite after four weeks and subsequently a proportional reduction in growth rate. Hypocalcaemia is a disturbance of metabolism in pregnant and lactating ewes leading to hyper excitability, ataxia, coma and eventually death (McDowell, 2003) resulting from the inability of the dietary intake of the ewe to meet the rapidly increasing Ca requirements in late pregnancy for foetal growth and colostrum production.

Phosphorous

The ratio of Ca: P in the body is generally maintained at 2:1; therefore it is not surprising that the requirement of the pregnant ewe for P is approximately half of that of Ca. The NRC (1985) place the requirement of twin bearing ewes during late pregnancy at 0.20 % of DMI. Taking the example used in the calculation of Ca requirements this would give a daily dietary requirement of 2.6 g/d which is similar to the requirement in the final stages of pregnancy (2.7 g/d) quoted by the ARC (1980). While there is an increase in requirements as pregnancy progresses it is not as dramatic as that witnessed in relation to Ca (NRC, 1985), largely due to the lower P content in the colostrum. Phosphorous deficiency is predominately a condition of grazing ruminants (McDowell, 2003) the primary effect of which is loss of appetite leading to pica or a depraved appetite where animals have a craving for bones etc.

Table 1. Daily requirement (g/day) of 75 twin bearing/suckling ewes for major elements in late pegnancy and lactation (Adapted from McDonald et al., 2011)

	Pregnancy			
	Days of gestation			
	98	**112**	**126**	**140**
Ca (g)	4.7	6.0	7.6	8.9
P (g)	4.0	4.4	4.7	4.8
Mg (g)	1.3	1.3	2.0	2.0
Na (g)	2.5	2.5	2.5	2.5
	Lactation			
	Week of lactation			
	1-4	**5-8**	**9-12**	
Ca (g)	12	10.5	9	
P (g)	10.2	9.4	7.4	
Mg (g)	4.2	3.6	2.9	
Na (g)	3.4	3.1	2.8	

Table 2. Dietary Allowances of trace elements for Sheep (Adapted from McDonald et al., 2011)

	Animal Class	**Dietary allowance (mg/kg DM)**
Copper	Pre-ruminant lamb	1
	Growing lambs	3
	Others	6
Iron	All classes	30
Iodine	Winter	0.5
	Summer	0.15
	Presence of goitrogens	2.0
Cobalt	All classes	0.3
Selenium	All classes	0.1*
Zinc	All classes	40
Manganese	All classes	40

*some data to suggest a positive response to feeding 0.5mg/ewe/day during pregnancy

The above values are synthesised from numerous reports

Magnesium

A deficiency of magnesium is often as a result of a secondary deficiency. The content of other mineral elements in the diet alters the efficacy with which Mg is absorbed by the animal. Feeding high levels of Ca and P tend to reduce the absorption of Mg from the rumen. High dietary potassium levels reduce the

absorption of Mg predisposing ruminants grazing young lush grass to hypomagnesaemia and tetany. Sodium has been shown to increase the absorption of Mg. High rumen ammonia concentrations (a consequence of spring grass high in crude protein) also reduce Mg absorption and have been associated with grass tetany in early spring. The transfer of animals from conserved forage plus concentrate diets to grass diets raise both rumen ammonia concentration and pH. As rumen pH increases the animals ability to capture the Mg in the diet decreases.

Requirements change throughout the lifecycle of the sheep with requirements increasing from 0.12 % DMI for growing sheep to 0.15 % DMI for late pregnant ewes to 0.18 % DMI for ewes during the early stages of lactation (NRC, 1985a). This gives a requirement of 2.34g/d assuming a DMI of 1.3kg/d.. These requirements will increase by 50% in the first month after lambing, dropping there-after. Hypomagnesaemia is most likely to develop following the onset of lactation with ewes rearing twin lambs most vulnerable in the first four to five weeks of lactation.

Sodium

The requirement of salt in the diet of sheep is linked to the requirement for sodium, and sodium deficiency has been associated with reduced performance for many years. Indeed in the absence of any mineral supplementation, reduced performance is most likely to occur from sodium deficiency. Sodium requirements are set at approximately 2.5g/day through pregnancy, and increase to increase to 3-3.5g/day in the first month after lambing for single and twin suckling ewes respectively. Excess sodium intake is not overly problematic once there is sufficient water available. Indeed increasing salt content in the diet is often used as a mechanism to minimise the risk of urinary calculi in intensively fed lambs.

Trace Elements

Unlike the major elements described above, where deficiency was more linked to adult sheep, trace elements are problematic in both the growing and the mature animal.

Cobalt

The function of cobalt in the animals diet is linked to its role in the production of vitamin B12 in the rumen, therefore what we describe as cobalt deficiency is more correctly identified as vitamin B12 deficiency. As a result administration of vitamin B12 will reverse the deficiency symptoms although this is an expensive and laborious method of treatment. Ensuring a consistent dietary supply of cobalt is the most appropriate strategy as cobalt is not stored to any major extent within the animals' body. In recent times the use of slow release boluses has become more common in this regard, especially in the growing lamb. Accordingly cobalt deficiency is more problematic with growing rather than mature sheep, with the symptoms normally presenting as reduced growth rate, dry scaly skin on the ears and face and a loss of springiness of the wool. Cobalt deficiency in the ewe especially around mating time can give rise to reduced litter size and the production of still born lambs or lambs of reduced vigour and viability with associated increased mortality.

Iodine

Iodine has many important roles to play in the animals body through its presence in the thyoid hormones, thyroxine (T_4) and Tri-iodothyronine (T_3). Inappropriate iodine nutrition is manifested by alterations of the concentrations of these two thyroid hormones. Feeds can occasionally contoaned goitrogens which reduce iodine availability (for example when grazing Brassica crops) and iodine levels need to be increased in these circumstances. Iodine inclusion levels range from 0.15mg/kg DM in summer to 0.5mg/kg DM in winter and up to 2.0mg/kg DM where goitrogens are present. Boland et al. (2004) set the iodine requirement of the pregnant ewe at 0.7 mg per ewe per day. Iodine deficiency is reported to be involved in many syndromes including , goitre, impaired fertility, impaired embryo and foetal development, production of lambs less likely to suckle and with increased mortality and also reduced milk production by the ewe.

As with most trace elements (copper being an obvious exception), there is a relatively small risk of toxicity occurring. Recent evidence indicates that at high levels of iodine intake (though still well below the quoted requirements) during late pregnancy, result in the production of lambs that have a greatly reduced ability to absorb antibodies from the colostrum, leading to an increased risk of mortality (Boland et al., 2005).

Copper

Copper is an essential trace element in the diet of sheep, though it is also highly toxic to sheep, with breed differences in susceptibility evident. This makes management of copper feeding somewhat more challenging. Symptoms of copper deficiency include swayback, loss of wool crimp (though not economically important does indicate the deficiency), loss of hair pigmentation in cattle, anaemia and reduced growth rates. Copper can become deficient as a result of the presence of other elements in the diet. This is especially an issue with forages. High levels of molybdenum and sulphur become involved in three-way interactions with copper serving to reduce copper availability. For this reason defining cooper requirements is dependent on numerous factors and provision of a single value is most likely to be inaccurate. As stated above sheep, of all farmed species, are most susceptible to copper toxicity and care needs to be taken with mineral inclusion levels in concentrate diets and also the inclusion of certain by-products (distillers, palm-kernel) requires careful monitoring. Copper is a chronic poison, with animals seemingly doing well on a high copper diet for a period of time, until there is a dramatic breakdown within the flock. In spite of this copper supplementation is required on sheep farms in some instances.

Selenium

Selenium has a specific biochemical function through Glutathione peroxidase and is also involved in thyroid hormone synthesis, as well has having a mutually sparing effect on vitamin E. Selenium deficiency most commonly presents itself as white muscle disease, a degenerative disease of the striated muscles. Additional signs of Se deficiency include reduced growth rate in lambs and high embryonic mortality between three and four weeks after conception in association with white muscle disease and unthriftiness. Selenium supplementation can increase lamb birth weight and weaning weight as well as lamb survival. The incidence of retained placenta in dairy cows has been linked to a deficiency in selenium and can be reduced by a

prepartum injection of selenium. Selenium requirements for sheep are nominally set at 0.1mg/kg DM, but many would recommend levels in excess of this.

References

Agricultural Food and Research Council. 1991. A reappraisal of the calcium and phosphorous requirements of sheep and cattle. Technical Committee on Responses to Nutrients, report number 6. Nutritional Abstracts and Reviews (Series B) 61: 573-612.

Agricultural Research Council. 1980. The nutrient requirements of ruminant livestock. Farnham Royal, UK, Commonwealth Agricultural Bureaux.

Boland, T.M., Brophy, P.O., Callan, J.J., Quinn, P.J., Nowakowski, P. and Crosby, T.F. 2004. The effects of mineral-block components when offered to ewes in late pregnancy on colostrum yield and immunoglobulin G absorption in their lambs. Animal Science 79: 293-302.

Boland, T.M., Brophy, P.O., Callan, J.J., Quinn, P.J., Nowakowski, P. and Crosby, T.F. 2005. The effects of mineral supplementation to ewes in late pregnancy on colostrum yield and immunoglobulin G absorption in their lambs. Livestock Production Science 97: 141-150.

Braithwaite, G.D. 1983. Calcium and phosphorous requirements of the ewe during pregnancy and lactation. 1. Calcium. British Journal of Nutrition 50: 711-722.

Lee, J., Knowles, S.O. and Judson, G.J. 2002. Trace-element and vitamin nutrition of grazing sheep. In Sheep nutrition (ed. M. Freer and H. Dove), pp 285-311. CAB International, Wallingford, UK.

McDowell, L.R. 2003. Minerals in animal and human nutrition, second edition. Elsevier, Amsterdam. National Research Council. 1985a. Nutrient requirements of sheep, sixth edition. National Academy of Sciences, Washington D.C.

Suttle N.F. 2010. The mineral nutrition of livestock, fourth edition. CAB International, Wallingford, Oxon, UK.

Utilising Grassland in Sheep Systems

Philip Creighton

Grassland Science Research Department, Animal & Grassland Research and Innovation Centre,
Teagasc, Mellows Campus, Athenry, Co Galway.

Sheep meat production is an important indigenous industry in Ireland and is a significant enterprise on over 30,000 farms. Irish sheep meat is seen as a product with a healthy image, natural and environmentally friendly. Sheep meat in the EU is in deficit and it is currently less that 80% self sufficient. The realization of the Food Harvest 2020 production targets require that new pasture management strategies are developed to further enhance the productivity and food production capacity of Irish pastures. It is predicted that improved technologies are expected to realize a 20% increase in the value the sheep sector. The successful international market penetration of Ireland's food and drink products has arisen as our products are recognized for their high quality from within animal welfare friendly pasture based production systems. Our continued success in these markets requires that any increases in Irish food production arise through productivity gains within our unique pasture systems.

Increasing our productivity in sheep output while maintaining low costs will be crucial to the profitability and sustainability of our grazing systems. Ireland's strength in sheep production lies in its ability to produce meat from an almost entirely grass based diet thus giving us a competitive advantage over many of our EU competitors. The main challenge for pasture based systems of sheep production is to improve the utilization of pasture and increase the output of lamb from grassland. Higher stocking rates and consequent higher output is possible by increasing herbage yield through greater and/or more efficient use of nitrogen (chemical fertilizer or fixed nitrogen) and by achieving better utilization of herbage in pastures. With grass making up 90-95% of the annual energy requirements of sheep (Davies and Penning 1996), any improvement in the efficiency of production and utilization greatly increase profitability. This can be achieved by developing optimum grassland management strategies. Extending the grazing season and the use of improved varieties of grass and clover with better winter growth characteristics also have major roles to play.

How Can the Potential of Grass be Harnessed in Sheep Systems?

In the future the main technical efficiency that can increase on sheep farms is the conversion of grass into meat. When talking about grassland systems of sheep production it must be bourn in mind that grass is a crop like any other. Grazing management, soil fertility and the make up of the swards present i.e. perennial ryegrass content are all critical factors which will influence the success or failure of grassland production systems.

Getting the Basics Right

Farm Set Up

Rotational grazing systems allow more control over grassland management decisions and provide options regarding closing of paddocks in autumn for early spring grazing. A paddock system allows an area to be

grazed by a group of animals in a fast and planned manner allowing the sward to rest and rejuvenate quickly post grazing to allow for greater grass growth potential. Prolonged re-grazing of fresh grass regrowths can have a draining effect on plant reserves which will slow growth rates. It is much easier to maintain quality swards in a paddock rather than set stocking system due to options with regard to removing surpluses or increasing the stocking rate on a particular area by adding more animals. A paddock grazing system can be achieved by simply dividing up larger fields with permanent fencing and/or using temporary flexible electric fencing.

Soil Fertility

Good productive soils underpin any successful farming system. Pastures will not perform to their potential if soil fertility is not correct. The soil's ability to provide the appropriate quantity of nutrient at the appropriate time for grass growth determines the productivity of a field or a farm, and consequently soil fertility should be foremost in the mind of those who wish to maximise the return from grazed grass. The exact quantities of lime and fertilisers required can be gauged from a soil test which should be carried out every 3-5 years with the results incorporated into a plan for fertiliser and lime applications. A soil test can be carried out by your local Teagasc adviser or private company. Fertiliser can account for up to one fifth of the total variable costs on sheep farms so effective management of this commodity has potential to save money. A liming programme should be in place on all farms in order to have soil pH at its optimum year on year. This will prevent soil pH from dropping to such an extent that the release of nutrients and the response to applied fertiliser will be compromised.

Sward Contents/Reseeding Programme

As previously mentioned grass utilised/ha is one of the main factors influencing profit/ha on grassland farms. Grass utilised/ha is a consequence of grass grown/ha, stocking rate and grassland management. Perennial ryegrass is a high quality feed and is more responsive to available nutrients than other grass species. Recent research at Teagasc Moorepark has shown old permanent pasture to produce, on average, 3 tonnes DM/ha less than reseeded perennial ryegrass swards. There are many beneficial reasons for reseeding as perennial ryegrass dominant pastures:

- Provide more grass in the shoulder periods of early spring and late autumn.
- Are 25% more responsive to nitrogen compared to old permanent pasture.
- Have faster re-growth.
- Support higher stocking rates.

As well as having more grass in early spring and late autumn newly reseeded swards are more responsive to nitrogen. This means that compared to old permanent pastures reseeded swards yield more grass per kg of nitrogen applied. Figure 1 shows the spring and autumn DM production of two pastures, an old permanent pasture and a new reseed. It is clear that the reseeded pasture with its high perennial ryegrass content

produces more grass in spring and autumn compared to the old permanent pasture (30% perennial ryegrass) which will not support early or late grazing systems as insufficient grass is being produced.

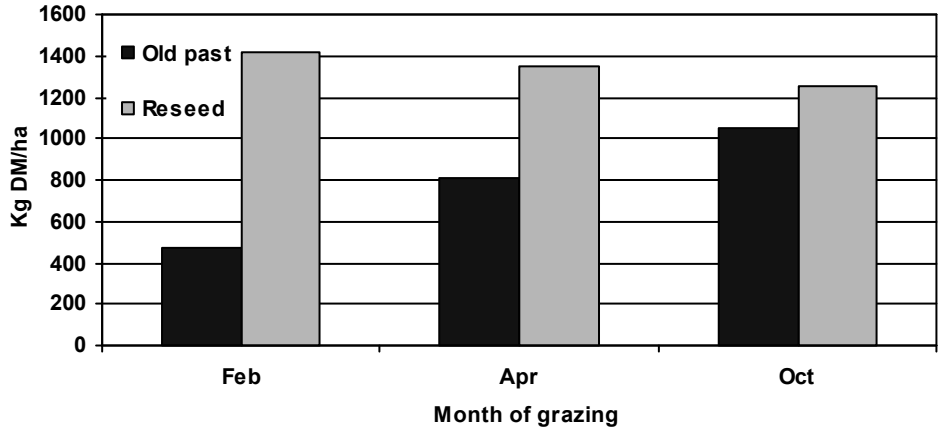


Figure 1. Effect of pasture perennial ryegrass content on DM yield.

Grazing Management

When we talk about grazing management we need to divide the grazing season into three sections; autumn, spring and mid-season.

Autumn

I have set autumn as the starting point as it is in the autumn that the new grassland year begins. Management and decisions made in this period have a direct effect on the quality and availability of grass the following spring which in turn feeds into mid season. Table 1 shows work carried out by Keady and Hanrahan (2012) which clearly shows the effect of autumn closing date on spring DM yield. To ensure adequate grass availability for ewes at lambing in March you should begin to close paddocks from early November onwards. The first paddocks closed should be sheltered and close to the lambing area. The temptation to regraze areas closed in December/January will always be there, especially in years where autumn grass and winter feed reserves are low/poor quality but this grass is worth much more in the spring to the freshly lambed ewe than in mid pregnancy.

Table 1. Effect of autumn closing date on subsequent spring herbage DM yield (kg DM/ha)

	Closing date			
Grazing date	**5 Dec**	**19 Dec**	**2 Jan**	**23 Jan**
3 April	610	337	175	62

(Keady and Hanrahan, 2012)

Spring

Having started your grazing plan for the year the previous autumn all going according to plan ewes can be turned out to grass as they lamb with minimal supplementary feeding, if any, required post turn-out. From a

management, cost and labour point of few this must be the aim. To boost spring grass supply nitrogen should be applied in early February or once soil temperatures reach 5-6°C (the threshold for grass growth). Urea should be used once conditions are not overly dry at a rate of 23 units/acre (half bag/ac). Grassland management in the first and second rotations in spring has a significant effect on the quality of swards available to the growing lamb in subsequent grazings. It is worth remembering that the majority of the lamb's intake during this time will be coming from milk. The aim must be to graze swards out to 3.5-4cm in March and April to ensure high quality leafy regrowths. If possible the first rotation should be finished by mid April. This will result in fresh leafy regrowths coming into the system when the grazing demand of the lamb begins to increase. If swards are allowed to build up stemmy material early in the season the quality of swards available will be poor and consequently lamb performance will suffer. Issues with weather and ground conditions which can make tight grazing difficult in a cattle situation should not be as big an issue with sheep systems.

Mid-Season

During the main grazing season the objective is to achieve high animal performance from an all grass diet. From late April onwards grass turns from vegetative (leafy) to reproductive (stemmy). This is a large management issue for grassland farmers. The aim must be to increase the quality of the grass allocated rather than the quantity offered; this is achieved by ensuring there is a high quantity of leaf in the sward. Grazing lower grass covers of 1100-1400 kg DM/ha (6-8cm), while maintaining a rotation length of between 17-21 days will help maintain grass quality in the May to July period. During the mid-season, when a plant starts to head it produces a reproductive stem. This changes the balance of the plant from producing green leaf to producing high stem proportions. Green leaf content is directly related to grass digestibility. A 5.5% change in leaf content is equal to a 1-unit change in digestibility. Poorly managed swards can result in large reductions in green leaf content to just 50% leaf during the reproductive period. Well grazed swards (4.5 – 5 cm post-grazing sward height) will contain a high proportion of leaf in the mid grazing horizon (4 to 10 cm). Sheep farmers must adopt a policy of offering swards with high leaf content throughout the season.

Management without Measurement

In order to achieve this some form of grass measurement will be required. Grass measurement and budgeting does not have to be complicated or expensive as is often the perception. There are a number of methods that can be used to measure grass supply on farms. The use of rising plate meters, the quadrant and shears method or simply eyeballing swards and assigning an estimate are all common. What method you use is irrelevant, the important thing is that some form of measurement is carried out on a regular basis which can be used to aid management decisions. To try and manage any business without knowing what the current and projected future basic inputs may be would not be accepted by the majority and farming and grassland management is no different. A tool which has been developed in dairy and beef situations to aid the management and measurement of grass is the 'Grass wedge' concept. The idea of the grass wedge is that once a week the farm is walked and an assessment of the quantity of grass available on each paddock is made be it in terms of kg DM/ha or sward height. You arrange the paddocks from highest to lowest as shown in Figure 2. A line is

then drawn from the point on the graph representing the target pre grazing yield down as far as the point on the graph representing the target post grazing yield. If paddocks are above the line you are in surplus or below the line in deficit. Where there is too much grass available the quality can deteriorate rapidly and on the other end of the scale if we continue to graze swards overly tight for a prolonged period in an effort to improve quality, growth rates can be reduced and we can run short of grass. The idea of the wedge is that we can recognise in advance what is coming down the line and take corrective action. Three words to remember when dealing with grassland systems are Monitor, Manage and Control. The use of the Grass wedge allows us to monitor what is happening allowing us to manage the system to control the desired outcome. Examples of actions which might be taken include removing heavy paddocks as baled silage to reduce supply or increasing fertiliser use where we see a period of deficit emerging.

What Can Be Achieved From Grass?

Two of the most important factors influencing the productivity of pasture based systems are stocking rate and ewe prolificacy. Stocking rates on Irish sheep farms are low considering the high grass growth potential. For example, the top third of sheep farms in the National Farm Survey (NFS) are stocked at 8.96 ewes/ha with the top third of Teagasc eProfit Monitor sheep farms stocked at 10.2 ewes /ha, however nationally sheep farms are stocked at 7.0/ha. Similarly weaning rates are low at 1.54 lambs weaned per ewe in the top third of profit monitor sheep farms, 1.4 in the top third of farms in the national farm survey with a national average of 1.35 lambs weaned/ewe. Within these stocking rates there is considerable scope to increase the proportion of grass in the grazing animal's diet. Higher stocking rates and higher output is possible by increasing herbage yield through greater and/or more efficient use of nitrogen (chemical fertilizer or by capturing atmospheric nitrogen by clovers) and by achieving better utilization of herbage in pastures. Currently at Athenry we have a grassland project underway looking at the effects of stocking rate and prolificacy level on the lamb output potential from grass based systems of production. Preliminary results from year one of the project show that high levels of lamb output can be achieved from grass systems which employ many of the management principles outlined in this paper. Table 2 shows the effect of stocking rate and prolificacy level on the proportion of lambs slaughtered from a March lambing flock with no concentrate supplementation to lambs. The important points to note here are the stocking rates and weaning rates achieved in these flocks and how these compare to the NFS and even the top performers in the profit monitor results mentioned above. When compared on lamb carcase (kg) output/ha the national average for 2011 was 207kg, whereas the range in carcase output/ha from these results, at an average carcase weight of 19.5kg would be 321–426 kg carcase/ha produced from grass excluding any remaining lambs finished with meals after mid October. This represents an increase in output of 55-106% compared to the national average.

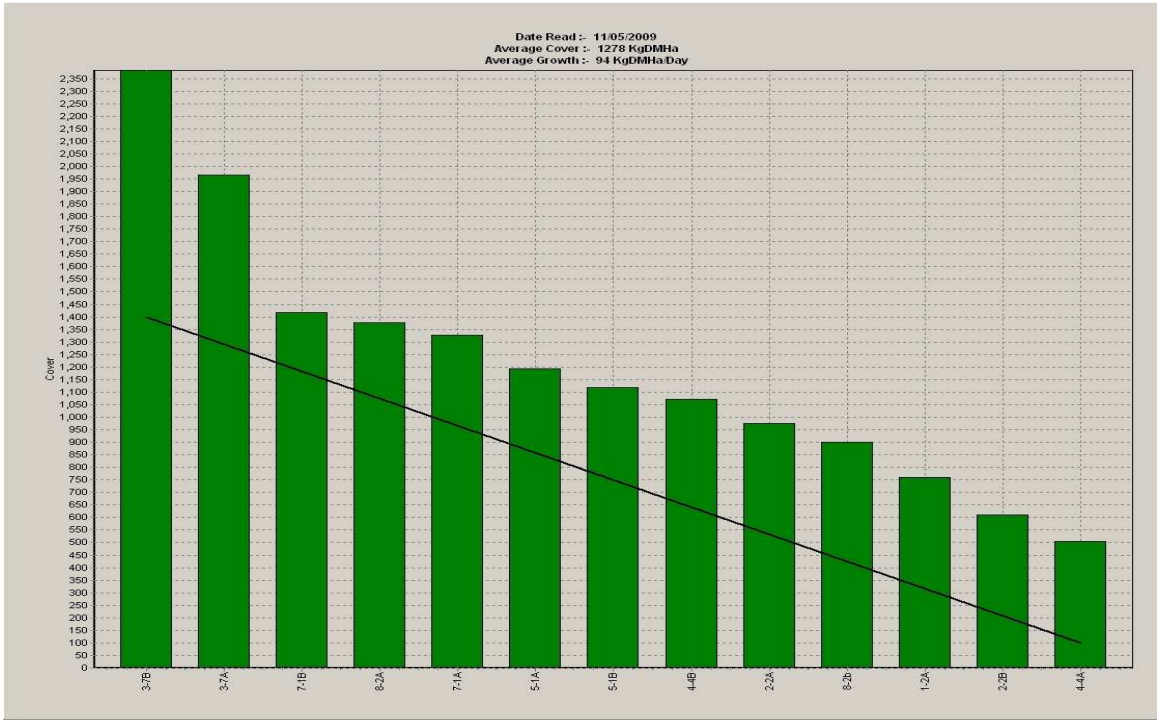


Figure 2. Example of Grass wedge showing grass surplus

Table 2. Percentage of lambs finished from grass by mid October as affected by stocking rate and prolificacy level.

	Lambs weaned/ewe	
Stocking Rate	**Medium (1.68)**	**High (1.80)**
10 ewes/ha	98%	94%
12 ewes/ha	99%	96%
14 ewes/ha	93%	82%

Summary

Great potential exists to increase output of lamb from Irish sheep farms while still operating from a low cost grass based system. Through management and the adoption of technologies systems can evolve. The challenge is to capitalise on our ability to convert this natural asset into meat and turn that meat into profit to build a sustainable business.

References

Davies, A and Penning, P. (1996). Prospects for improving the efficiency of sheep production from grass. Irish Grassland and Animal Production Association Journal, **30**: 129-147.

Keady, T.W.J and Hanrahan, J.P.(2012). The effects of allowance and frequency of allocation of autumn-saved pasture, when offered to spring lambing ewes in mid pregnancy, on ewe and lamb performance and subsequent herbage yield. Livestock Science. 143:15-23.

Teagasc (2012). National Farm Survey Results 2011, Sheep enterprise: Mid-Season Lamb. Available online www.teagasc.ie/publications

Sheep Technology Adoption Programme - €1000 per farm

Frank Hynes[a], Terry Carroll[b], Gerry Murphy[c]

[a]Sheep Specialist, Animal and Grassland Research & Innovation Centre, Teagasc, Mellows Campus, Athenry, Co. Galway. [b]Teagasc, Kells Road, Kilkenny, Co Kilkenny. [c], Teagasc Adviser, Teagasc, Abbey Road, Ballinrobe, Co. Mayo.

Under Food Harvest 2020, development targets were set for the sheep sector, as with a number of other sectors. In order to assist with the achievement of these targets, Exchequer funding has been made available in 2013 for the establishment of a Sheep Technology Adoption Programme (STAP). The programme is designed to encourage the adoption of best management practice on sheep farms and thereby increase profitability. Programme applicants are required to participate in discussion groups, which should provide farmers with the additional knowledge and skills necessary to improve the performance of their sheep enterprise, thereby improving the sector as a whole.

This programme was launched in mid January, 2013 by Minister for Agriculture, Food and the Marine, Simon Coveney, TD. It is now open for applications and is expected to last for three years. Total funding available in year one is €3 million. With an anticipated uptake by 3000 farmers, the payment per participant is targeted at a maximum rate of €1,000/participant.

Who Qualifies?

- Farmers must have a minimum flock size of 30 breeding ewes, based on either the 2011 or 2012 sheep or goat census. Applicants who are selling lambs directly for processing must also be members of the Bord Bia Lamb Quality Assurance Scheme (BBLQAS). If they are not they may still join the programme but must apply for membership of the BBLQAS by 28 March 2013 and achieve accreditation by 30th September 2013.
- Farmers without breeding stock can participate provided they have purchased a minimum of 100 lambs/hogget's for breeding (based on 2011 or 2012 sheep census). Store lamb finishers must apply for membership of the BBLQAS by 2 September 2013 with a view to achieving certification before the commencement of year 2.
- The Department also indicate that where numbers allow, provisions may be made for new entrants.

Actions Required to Qualify

- apply to a facilitator (Teagasc Adviser or private consultant) by 15th February 2013
- attend a minimum of four discussion group meetings or three group meetings plus one national event throughout the year
- undertake at least two tasks that will improve farm production. These two tasks must be chosen from a list provided in the scheme

- complete a 3 year plan including a baseline performance survey
- comply with rules to verify all of the above have been completed

The tasks and discussions will focus primarily on five key areas of production; financial management, grassland management, flock health, animal breeding / welfare and producing animals to meet market requirements. Farmers who are participants in the Beef Technology Adoption Programme (BTAP) are eligible but different tasks must be chosen in each programme. The menu of tasks from which farmers must select two, are briefly described below (DAFM, 2013).

Menu of Tasks

Task 1

This task is compulsory in either year 1 or year 2

Increase the genetic merit of the flock by using a ram of superior genetic merit. Participants must use a performance recorded €uroStar ram bred by a Lamb Plus breeder as certified by Sheep Ireland. Participants will be required to produce evidence to Sheep Ireland of purchase in 2010, 2011, 2012, 2013 or 2014 of a pedigree ram that has been performance recorded by Sheep Ireland. The ram must be 3, 4 or 5 Star on Production, Maternal or Lambing sub index. The ram must be used to mate ewes in either year 1 or 2 of the programme. The minimum requirement is one €uroStar recorded ram satisfying the above criteria per participating flock. Hill farmers with a majority of ewes that consist of Blackface Mountain, Cheviot, or a cross of these breeds do not have to pick this task as a compulsory task. Further details on the requirements for this task are available on www.sheep.ie. This task will be verified by Sheep Ireland.

Task 2

The objective of this task is to increase the level of pedigree and commercial data being recorded in the Sheep Ireland Database. Further details on the requirements for this task are available on www.sheep.ie Completion of this task will be verified by Sheep Ireland. Participants must choose one of the 3 following options;

Option A: Weight recording: The objective of this measure is to help flock owner's measure flock performance. They must provide on farm lamb weights to Sheep Ireland, subject to a maximum number of 100 lambs. The requirements for this will be set out by Sheep Ireland.

Option B: Maternal flock recording: The objective of this measure is to help sheep farmers identify better replacement females. Participants choosing this option will be encouraged to establish a 'Nucleus recording flock'. This flock would be the source of future replacements and would consist of the best ewes from within the flock. The requirements for this will be set out by Sheep Ireland.

Option C: Identifying full parentage of lambs through detailed mating records: Participants would be required to identify the sires of lambs born in the flock. This will be done through recording rams used on a minimum of 20 ewes in the flock. Full requirements will be set out by Sheep Ireland.

Task 3

Carry out a faecal egg count reduction test to establish the level of parasite resistance to the commonly used anthelmintics (i.e. White drench; Benzimidazole (1-Bz), Yellow drench; Levamisole (2-LV) and clear drench / injection Macrocylic Lactone (3-ML) (includes Ivermectin). This must be carried out between 1 June 2013 and 20 September 2013. On farms where test results show a pre drench faecal egg count of under 600 eggs per gram, the faecal test must be repeated 3-4 weeks later. On farms where test results show a pre drench faecal egg count of over 600 eggs per gram, the drench test instructions must be followed. A list of approved laboratories will be available on the DAFM website.

Task 4

Complete a flock health plan with a veterinary surgeon. A sample template, which may be utilised if deemed suitable for this purpose in consultation with your veterinary surgeon, is supplied by the DAFM with terms and conditions of the programme. This flock health plan must be reviewed with the relevant veterinary surgeon annually for the duration of the programme.

Task 5 (Qualifying task in 1 year only)

For farms stocked at less than 170kgs/HA, complete whole farm soil analysis for entire farm. Soil samples must be taken in accordance with the procedure outlined in Schedule 1 of SI No. 610 of 2010. Applicants who are required to apply for Nitrates derogation or who are participants in AEOS 2 (2011) or who have selected Task 4 in BTAP are ineligible for this task. Soil samples must be taken after the commencement of the Programme. In 2013, soil samples must be taken before 30 September.

Task 6

Reseed a minimum of 10% of the net owned and leased grassland area (excluding commonage, habitats and rough grazing), subject to a maximum of 4 ha, of the farm. Receipts for all purchases must be retained by the participant and presented to the facilitator for verification purposes.

Task 7 (Qualifying task in one year only)

Put a rotation grazing system in place on the farm with a minimum of 4 grazing divisions per grazing group and each division must have its own water supply. Grazing divisions may be through permanent fencing or through temporary electric fencing which may be rotated around the farm and must be in place by 1 May 2013. Existing or previous participants in the Sheep Handling/Fencing TAMS Scheme are ineligible for this task.

Task 8

Complete a Teagasc Profit Monitor (or equivalent programme approved by DAFM) for the previous production year on the participants' own farm, as verified by the facilitator. BTAP Participants who opt for Task 1 under BTAP in 2013 are ineligible for this Task.

Task 9

This task is for Hill sheep farmers only. Creep feed concentrates to Hill lambs being sold as store for at least 4 weeks prior to sale.

Task 10 – For year 2

This task is available for year 2 (from 5 October 2013). Ultrasound scan all breeding ewes 80 – 95 days post ram turnout. Record litter size using a suitable marker spray on each ewes fleece.

Application forms and full details can be obtained from your Teagasc adviser. Full details are also available on the DAFM website.

http://www.agriculture.ie/farmingsectors/sheepandgoats/sheeptechnologyadoptionprogramme2013/

Details concerning Tasks 1 & 2 can be obtained from www.sheep.ie

References

Department of Agriculture, Food and the Marine (DAFM), 2013 Sheep Technology Adoption Programme 2013, Terms and Conditions

Evolution of the Perception of Lamb in France: Agneau Presto

Denis Lerouge
Product Communication and Promotion Manager
INTERBEV, France
d.lerouge@interbev.asso.fr

Up until recent years the French lamb market had remained staunchly traditional in terms of the range of products and consumption patterns. In 2006 the French, English and Irish lamb industries agreed this situation was of detriment to their desire to boost lamb consumption. They resolved to take joint action to renew consumer attitudes towards their product, and as such, in 2008 they launched Agneau Presto, a new way of buying and consuming lamb; indeed an approach aimed at transforming press coverage of lamb and broadening consumer vision. This new approach is gradually being adopted at the point of sale.

Background

Although the general figure for meat purchases at traditional butchers is 20 %, this figure rises to 30% in the case of lamb. Households whose food organiser is over 50 buy 58 % of meat generally, but 74 % when it comes to lamb. So the consumption of lamb in France tends to be attributable to the ageing traditionalist population.

Here are a few statements about lamb young householders made, upon reading the figures:

"A leg of lamb is great for the family Sunday lunch"

"I love it apart from the long cooking"

"Actually with the exception of chops it comes in large pieces, making it expensive"

"Lamb is very fatty and full of bones, so the result is lots of leftovers on your plate"

The French, English and Irish lamb industries are aware this state of affairs heralds trouble ahead. As the ageing population is superseded by younger people, lamb consumption is slated to decline due to the product's traditional stuffy image and evolving eating habits: less celebratory and family meals and the tendency to prefer the shops over domestic food preparation.

Work was undertaken in France inspired by Irish publicity experiences and the British Quick Lamb campaign. Interbev Ovins, an interdisciplinary organisation spanning the French industry, organised study visits and a marketing seminar. These measures culminated in the decision to work together with France's two main external suppliers, namely Great Britain and Ireland.

These three industrial bodies undertook joint action with the aim of firstly rejuvenating the perception of lamb widespread among the French, and secondly changing their eating habits. It is interesting to note in passing that this type of trans-national collaboration is not very common.

The Strategy Adopted

The thinking of the three industry arms led them to propose a program designed to make lamb more accessible and raise its profile, leading to more frequent purchases, which focused on two areas, namely supply and the message communicated:

- A new approach to supply: working on lamb supply taking account of consumer expectations and with a view to proposing new, more accessible, products.
- A new vision: leveraging collective information to change consumers' perception of lamb and their approach to it.

It was decided the information strategy aimed at increasing lamb consumption should involve updating the product and introducing it into everyday domestic cooking experience. This aim required them to affirm the product's modern image and its finer points, by suggesting recipes and preparation methods in line with everyday customs.

So it turns out that, in order to be effective, any campaign designed to renew consumer perception of lamb should be based on concrete measures and solutions. It is not enough to hammer home a few general messages because substance is required: articles portraying the convenience of lamb, recipes, personal stories and ideally some new products.

Rather than turning to mass media like television, the industry had to invest in means capable of creating a new perception of lamb: the internet, magazines, newspapers, point of sale collaboration through promotions, packaging etc.

The *Agneau Presto* Concept

The French consumer possesses a positive perception of lamb from a taste point of view. Our aim was to persuade the consumer that this meat was perfectly suited to the modern kitchen on an everyday basis.

With this aim in mind we drew up a list of guidelines listing our preference for meat cuts:

- For a maximum of 4 people
- That can be grilled in less than 10 minutes or roasted in less than 30
- That leave less leftovers on the plate

Communication on the subject of this "new lamb" needs to be concrete with great emphasis on demonstration.

The agency retained by tender suggested a logo that gets this message across clearly by way of name and graphics: *Agneau Presto.*

From the very moment of launch this logo succeeded in unifying the industry and then consumers. The name is written within a watch to show immediately how quick lamb is to cook. The pure, fresh colours serve to rejuvenate the product's image.

In tandem with the concept of communication we drew up a guide to lamb cuts aimed at operators, distributors and management, and a special guidebook was drawn up for traditional butchers. These two guides are designed to help the industry define lamb cuts that are convenient and quickly transformed into dishes.

Agneau Presto Publicity

2013 is the 6th year of the *Agneau Presto* program. Consumer publicity has evolved over time, but has always been guided by certain principles:

- Address the consumer directly at trade shows and by means of social media
- Provide operators with means of contacting the consumer at the point of sale
- Persuade the media to feature *Agneau Presto* and broadcast recipes

Every year *Agneau Presto* has a presence at one of the largest French shows, Salon International de l'Agriculture, which attracts more than 600,000 visitors and allows for cookery demonstrations with public participation. *Agneau Presto* is similarly present at various regional shows thanks to action by the Interbev regional committees. In 2012 we incorporated a new tool, namely cookery courses run by major retailers. Consumers generally react the same way, expressing their appreciation of the featured recipes and interest in discovering the meat is easy to prepare.

In order to establish direct contact with consumers, a number of entities were set up, including a website, newsletter, iPhone app, mobile site, internet banner campaigns, purchases of key words and partnership with the second largest French recipe site.

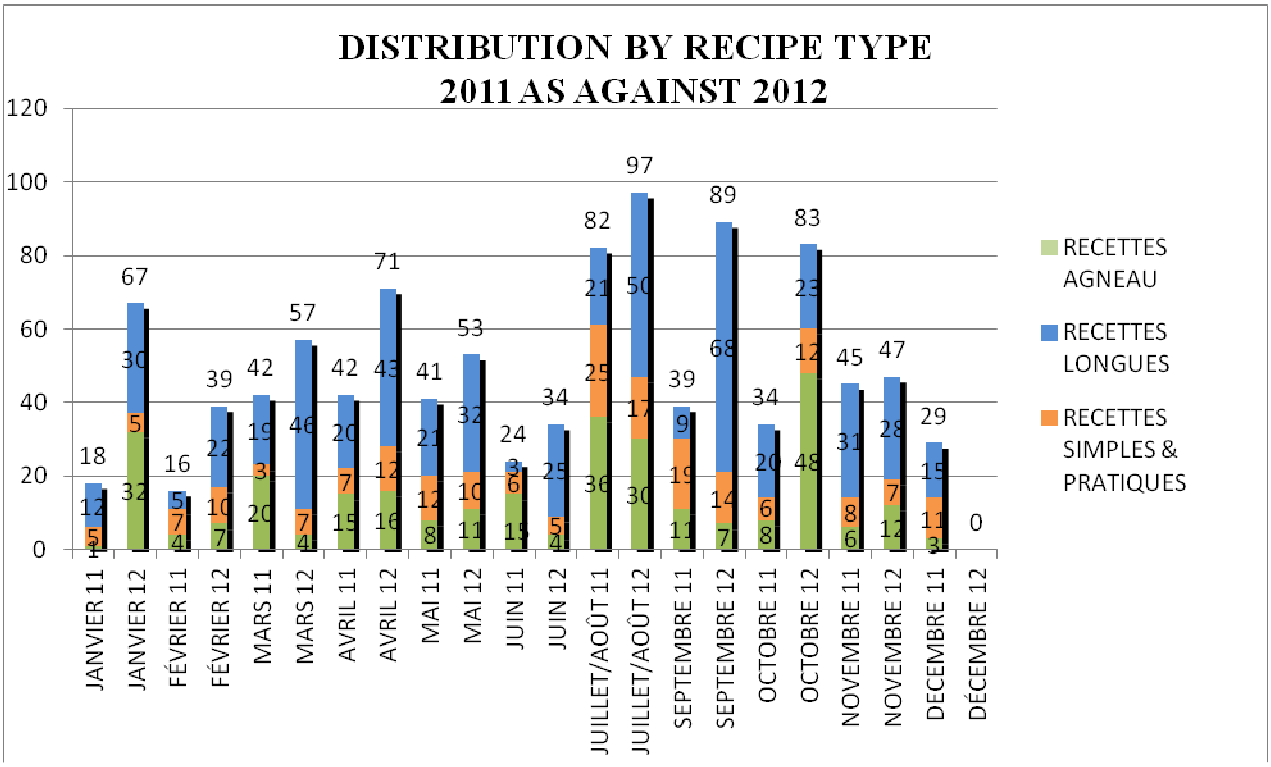
The number of people reached through these various measures is estimated at over 18 million.

A number of means were made available for operators to communicate directly with consumers at the point of sale such as point of sale publicity items, billboards, shelf stops and separators, and stickers. A QR barcode was also developed to permit the consumer to use his smartphone for direct access to recipes on the mobile site.

On the right you can see a copy of the most successful example of our collaboration with operators. This is the sticker appearing on all items in the Agneau Presto range sold by French distributor CORA at its 59 hypermarkets.

It is attached to 9 reference items and carries our logo and special QR code.

Regular issue of press kits and an annual dinner enable us to get our message across effectively to cookery journalists.



Without doubt the above graphic is a clear demonstration of the success enjoyed by our press relations campaign. Before the existence of *Agneau Presto,* lamb recipes dispersed by the French press tended to be exclusively traditional, such as the proverbial *7-hour leg of lamb*, and although these were delicious, they were hardly suitable for everyday meals.

With the appearance of *Agneau Presto* more practical recipes have been added to these traditional publications, and two points are worth noting. Firstly it is beyond doubt that we have experienced growth, because lamb recipes have almost doubled in number, significantly raising the profile of the meat. Secondly, while the practical recipes published consist of Presto recipes distributed in our press kits, we increasingly see recipes developed by the journalists themselves, which shows how they have appropriated the concept and are running with it.

In total, in 2012, there were more than 450 articles dedicated to Agneau Presto (64.7% including visual items), compared with 393 articles in 2011. This represents 41 articles per month, or 10 articles per week, which means 1,143,134,739 potential contacts and an advertising price of 1,027,364 euros. Which is a 9.78 return on investment in press relations.

Recettes agneau	Lamb recipes
Recettes longues	Long recipes

Recettes simples et pratiques	Simple, practical recipes
	January 11
	January 12
	February 11
	February 12
	March 11
	March 12
	April 11
	April 12
	May 11
	May 12
	June 11
	June 12
	July/August 11
	July/August 12
	September 11
	September 12
	October 11
	October 12
	November 11
	November 12
	December 11
	December 12

New arrivals on the culinary scene are bloggers, and nowadays they constitute a major influence. We have undertaken several operations with them, and they are truly enthusiastic about spreading the *Agneau Presto* message through numerous recipes created by them. We estimate at more than one million the number of contacts attributable to their input.

In conclusion, the concept *Agneau Presto* is tailored entirely to consumers' expectations. This is demonstrated by the success of face-to-face demonstrations carried out with them and sales made by distributors displaying their range properly. The graph is a picture of success and is in line with the messages we seek to disseminate. Journalists and bloggers hereby function as volunteer partners. The awareness profile of Agneau Presto reached 10 % at the end of 2012, which is a significant figure in proportion to the outlay. The next challenge we shall face is speeding up the diversification of point of sale meat cut choice.

'Customer is King' – They Make the Ultimate Choice

Declan Fennell,
Bord Bia,
Clanwilliam Court,
Lower Mount Street, Dublin 2

After successive years of decline, 2011/12 saw an important turning point for the Irish sheep industry. It was period where confidence grew on the back of incremental growth in our national breeding flock. This brought about increased throughput at farm and processing level. During that same period Irish sheep exports delivered double digit growth and despite our economic woes, retail sales of Irish lamb have grown steadily.

The above developments are in sharp contrast to other Member States, where sheep meat production and domestic consumption have been falling. Ireland may be a relatively small player in the global sheep meat market nevertheless we have proved to be a formidable force in bucking the trends.

Production Grew Despite a Challenging Summer

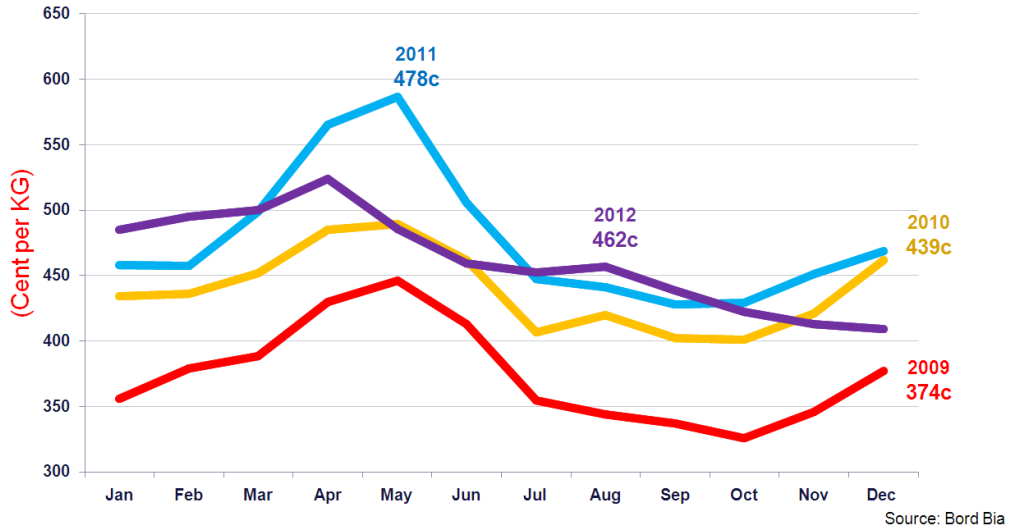
Throughout 2012 a higher demand from both the domestic and export markets were evenly matched with supplies, particularly during the peak periods of hogget and main season lamb supply. According to figures from the Department of Agriculture, Food and the Marine, total slaughterings in 2012 were up 12%, or 260,000 head to 2.43 million sheep. This included 68,000 extra hoggets, 160,000 extra lambs and 32,000 additional ewes and rams slaughtered in 2012.

In the context of summer 2012, where temperatures and sunshine levels were below average and rainfall was higher than usual, a 12% increase in sheep meat production was an impressive result. This increase in production was predominately driven by increased sheep numbers from the Republic of Ireland. Figures released from the Department of Agriculture Rural Development, Northern Ireland, indicate that live exports from the north to the south were back by 5% in 2012.

In reviewing average sheep prices for 2012, we are naturally inclined to use 2011 as the reference point. However, 2011 was an exceptional year to compare prices with and leaving aside the early lamb trade and the trade since October, lamb prices remained relatively stable for a large part of the year. At €4.62/kg, average sheep prices for 2012 were back 16 cent from the record highs of 2011.

Whilst 2012 delivered a fair price return, it is important to remember that input costs increased rapidly throughout the year. Weather conditions played havoc for the latter half of the year and made it significantly harder to finish lambs. Indeed tight grass supplies saw many producers forced to introduce expensive supplementary feeds to finish their lambs to a market specification.

Figure 1
Irish Sheep Price (c/kg)



Price Remained Stable during Peak Supplies

One of the positive takeouts from 2012 was how well the industry managed the additional supplies of sheep meat particularly during the period from July to October. With the exception of the bank holiday weekend in October, where processing was restricted to 4 days, throughput exceeded 55,000 head for 23 consecutive weeks. Even though supplies peaked by almost 20% on the previous year, prices remained relatively stable throughout the period.

Irish Exports Growing

On another positive note, exports of Irish sheep meat registered a solid performance in 2012 where total value rose by 7% to €205 million. 70% of our production is destined for export markets, the vast majority of which is destined for the EU market. Just over 42,000 tonnes were exported to over 24 individual markets across the globe in 2012.

France and the UK continue to be our core export markets representing three quarters of our volume exports. Strong increases in shipments were recorded to Belgium, Germany and Sweden as exporters continue to secure new business and grow volume with existing customers.

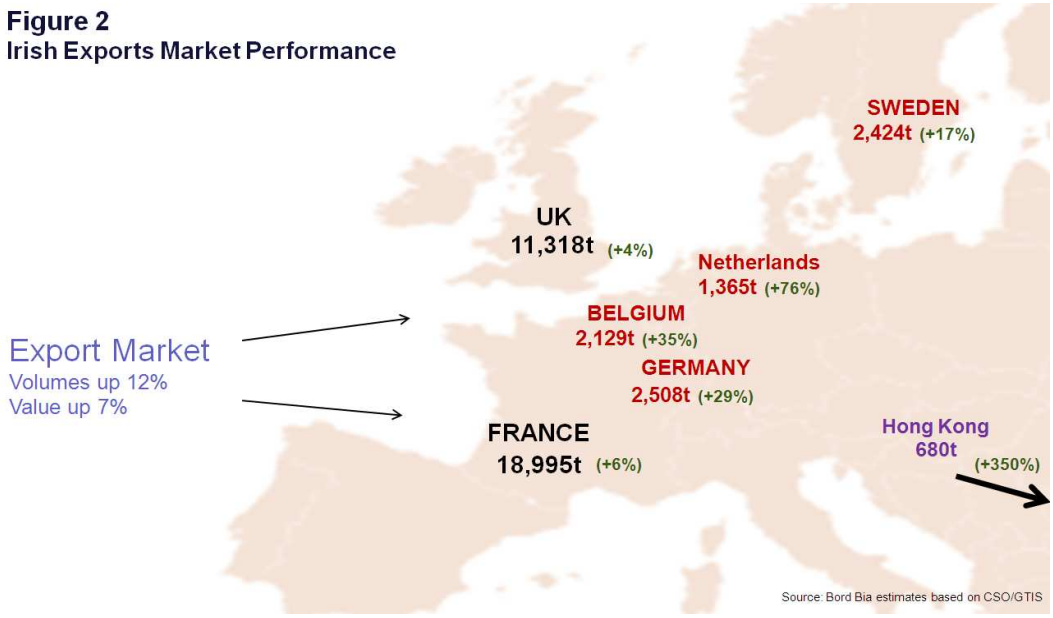
Despite the ongoing pressure on retail meat sales in Ireland lamb held its own, with data from Kantar Worldpanel showing a rise of almost 4.5% for the 52 week period ending November 2012.

Weather Extremes Impact on Production

Similar to Ireland, inclement weather delayed the finishing of the UK main season lamb crop. However, summer 2012 had a far more crippling effect on the UK sheep industry as slaughterings for the year were back by 8% or 700,00 head (24,000 tonnes). On account that 50% of UK lambs are destined for the French market, the reduced availability of UK lamb for export put Ireland in prime position to grow business into the French market. Whilst this provided us with a competitive advantage last year, the carryover of UK hoggets into 2013 will put further pressure on prices over the coming months.

Adverse weather conditions around the world have also caused prices for some agricultural commodities to increase sharply in recent months. For example, the 2012 US harvest was hit by severe drought conditions, the worst in 56 years. This has had far reaching effect in driving the costs of global feedstuff to record highs.

Figure 2
Irish Exports Market Performance



Supplies Increase in the Southern Hemisphere

Tighter global supplies that characterised the sheepmeat markets in 2011/12 have eased slightly as global production edges up 1% to 13.6 million. Good pastures and favourable lambing conditions in Australia and New Zealand have reversed four years of declining output. Production in both countries is forecast to grow by 3-5% this year.

Due to the ongoing austerity in Europe, New Zealand lamb processors have struggled to sell sufficient volumes at previous year prices. With an increase in the availability of cheaper lamb from the southern hemisphere, in comparison with 12 months ago, the price differential between New Zealand and EU lamb has been widening since summer 2012.

In the last three months of 2012 the price differential became most pronounced as the gap widened by as much as €1.00/kg. This explains why Irish and UK prices failed to follow the normal upward price trend that tends to happen towards the latter part of the year. As illustrated in Figure 3, Irish prices from October to December increased by 30c/kg in 2010 and 40c/kg in 2011 but fell by 14c/kg in 2012.

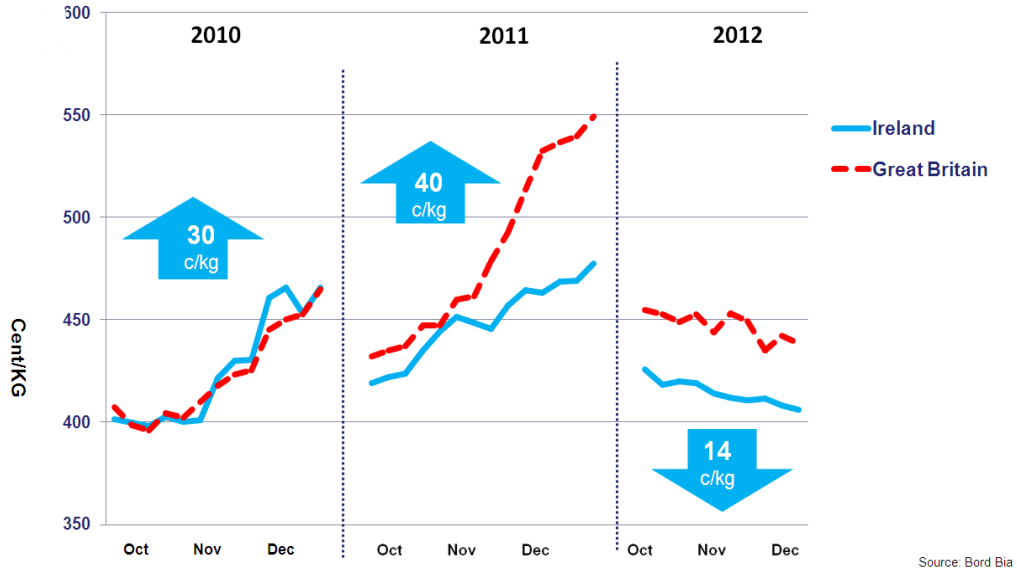
'Consumer is King' – They Make the Ultimate Choice!

Today's consumer seeks value and is prepared to switch to a cheaper protein option. Lamb is relatively expensive meat therefore it is vital that we continue to make a concerted effort to promote and position lamb as a preferred choice. How can we achieve this?

1. Quality Assurance: The use of the Bord Bia Quality logo on-pack is growing in popularity since its launch on lamb back in 2008. According to Bord Bia retail store audits, the percentage of facings of lamb product with the Quality Mark has risen from 55% to 84% in the period December 2010 to 2012. This provides clear evidence that Irish retailers are committed to promoting Quality Assured Irish lamb and together with a growing number of Irish consumers looking for the Quality Mark the demand for this lamb is set to grow.

Overall numbers of lamb producers in the BLQAS scheme stand at just over 9,300, which roughly equates to 45% of our national throughput. The recent announcement of the Sheep Technology Adoption Programme (STAP) by the Department of Agriculture, Food and the Marine is a welcome initiative in potentially growing the membership base of BLQAS amongst lamb producers.

Figure 3
Producer Prices Slipped in Q4



2. Deliver on Taste: Irish lamb is an all year round favourite amongst consumers. It is held in high regard for its very high quality and distinctive delicate taste. According to a Bord Bia consumer study, 51% of those surveyed said lamb was the tastiest of all meats. However, there has been an ongoing debate around ram lamb and the influence of taint and consumer acceptability. It widely accepted that from September onwards, ram taint becomes most pronounced and distinct in flavour. For some consumers, such as the Muslim community, there is a preference for this stronger taste. Whilst others consumers would find this taste off-putting, this is unacceptable.

Research is needed to develop a greater understanding of this issue and the influence of flavour intensity so as to increase consumer acceptance. In the meantime, the industry needs to send out a clear signal on how best to manage ram lambs.

3. Product Specification: Failing to meet the required carcase specification has a knock-on effect on consumer spending. Heavier carcases lead to larger and heavier cuts and are more difficult to sell. The majority of retailers will report that lighter cuts are much more appealing to customers who have a certain budget for meat. The images below set out three different scenarios based on an overweight, ideal and under-finished carcases.

Overweight Carcase (>22.5kg) ⟶

The larger size cuts from heavier lambs mean only two chops can fit in the tray. There is also excessive levels of fat which impacts on appearance.

⟵ **Ideal Carcase** (<21.5kg)

As is clearly seen, four chops fit in neatly into the tray and deliver a very high standard of presentation.

Underfinished Carcase (<16kg) ⟶

Cuts from the underfinished carcase lamb fail to adequately fill the container and give the appearance of a lower quality product.

4. Consumer Promotion: Increasing the frequency of purchase of Irish lamb and encouraging shoppers to look for the Bord Bia Quality Mark on-pack when shopping will be the key objective of the Bord Bia 2013 lamb promotions. Promotional activities will include radio advertising, which will be undertaken around Easter, announcing the arrival of early season lamb amongst consumers. Similarly, a series of promotional activities to include PR, publicity and in-store activities will be undertaken to coincide with peak availability of new season lamb. The TV advert highlighting the unique flavour of our lamb due to our ideal climate will play a central role in our 2013 promotions.

Bord Bia's Lamb TV commercial - *Its all down to the rain! It makes the grass sweet and green and gives lamb its unmistakeable flavour.*

Teagasc Sheep Meeting

Tackling the Challenges in the Sheep Sector

IFA National Sheep Chairman

James Murphy

February 2013

www.ifa.ie

Key Factors for a strong sheep sector

- Profit at farm level
- Profit = Price, output, costs and direct supports
- Focus on price and direct payments
- Working together with strong leadership and clear purpose
- To keep lambing ewes – Need profit
- Next Generation

www.ifa.ie

Lamb Price

- €100/Lamb – mid-season
- Early lamb – Increase in costs
- Current Hogget price difficulties
- UK – France – NFU – FNO
- Farmer- Processor - Retailer
- Better co-ordination
- Contracts

www.ifa.ie

Lamb Price

- New Zealand – price pressure
- Promotions – Irish plan
- Quality Assurance – Reward
- Consumption issues
- Live Exports – Muslin trade
- Price information - Text and apt

www.ifa.ie

CAP 2013

- Ciolos proposals damaging for Irish Agriculture – hit production
- Budget – Irelands' envelope
- IFA opposed to Regionalisation and flattening
- Coupling – vital for sheep and sucklers
- Greening – flat vs variable
- Importance of Pillar II funding for vulnerable sectors and regions

www.ifa.ie

Farm Schemes

- Sheep grassland scheme – mistake to cut it
- Sheep Discussion Groups – good, but not at expense of grassland scheme
- Disadvantage Areas
- Cuts Targeted at low income drystock sector – Farm schemes

www.ifa.ie

Sheep Incomes

- Teagasc figures on sheep and direct payments
- Sales not covering costs
- Totally dependent on direct payments for income

www.ifa.ie

Minister and direct payments

- Minister doesn't seem to get it on direct payments
- “Get it from market place”- not possible
- UCD study- Importance of drystock- economic, output and jobs
- Minister must take a more hands on approach with sheep sector

www.ifa.ie

The Challenge

- Challenge Minister to deliver on CAP and Farm Schemes
- Needs to include the sheep sector
- Processing sector, Bord Bia - to deliver on price
- Cannot depend on a weather/disease crisis to secure strong price.

www.ifa.ie

Teagasc and Production

- Farmers - apply for STAP and TAMS
- Revamped TAMS
- Welcome Michael Gottstein
- Need to fill third sheep specialist role
- Athenry and BETTER Farms-€1000/ha
- Sheep Ireland and breed improvement

www.ifa.ie


THE IRISH FARMERS' ASSOCIATION
Working
together for a
Better Future
Feirmeoirí Aontaithe na hÉireann
The Irish Farmers' Association
IFA

The Conference in Perspective - Take Home Messages

Michael Gottstein
Head of Sheep Programme
Teagasc, Cleeney, Killarney, Co. Kerry

A significant amount of new and valuable new information was given out this evening. I would like to summarise a few key take home messages.

Session 1

In the first Session this afternoon (Animal Health) we had three very informative presentations. Most striking is the whole area of anthelmintic resistance. Anthelmintic resistance is arguably the biggest threat facing sheep farmers. Unpublished works carried out by Teagasc staff Barbara Good (Athenry) and Tom Coll (Mohill) indicate that triple drench resistant stomach worms are a reality on a significant number of the sheep farms where investigations are been carried out. Welsh and Northern Irish work has shown that nematodirus battus resistance to both Benzimidazoles (white drenches BZ-1) and Levamisole (Yellow drench LV-2) is also now emerging as a problem. Irish sheep farmers should ignore these results at their peril – faecal egg count reduction tests (FEC) are simple and cheap to carry out – I ask you the audience – why are you not using this technology to identify what drugs are no longer effective on your farms?

Liver Fluke carries a huge financial cost in terms of lost performance, expenditure on drugs and labour to treat it and liver condemnations in the abattoirs. The important message from today's session is to;

1. Treat at the appropriate time
2. Treat with the appropriate active ingredients
3. Guard against the development of flukicide resistance

Lameness is both a significant animal welfare issue and causes significant production loss on Irish sheep farms. Proper diagnosis is essential if appropriate treatment protocols are to be employed. The use of the Targeted Agricultural Modernisations Scheme (TAMS) to acquire a mobile handling unit and foot bathing system should be strongly considered by all flock owners who are currently struggling to maintain the level of lame sheep in their flock below the target of 5%.

Session 2

The second session today focused on animal nutrition. The year 2012 will be remembered as one of the wettest on record resulting in many farmers having difficulty in saving fodder crops at the appropriate time. The knock on effects in terms of late pregnancy nutrition, mineral supplementation requirements and the importance of grassland management have been well covered.

The take home message for farmers is – Do not rely on the blueprint or what you have done in previous 'normal' years, 2012 has not been a normal year. Indications are that ewes are in poorer body condition than

in previous years. The nutrient value of winter forages is significantly lower than normal on most farms. Do not over estimate the feeding value of your forage stocks – it is still not too late to get these analysed and to make appropriate adjustments to concentrate feeding levels. Adequate levels of late pregnancy nutrition are essential not only to minimise problems at lambing time but also to safe guard lamb performance throughout 2013.

Session 3

Our third session has focused on Marketing & Policy. The renewed confidence in the sheep industry has resulted in flock expansions and extra output on key competing markets. This has resulted in the 2012 lamb crop failing to meet the prices achieved in 2011 and from an industry point of view a strong market price is important in maintain confidence. Global sheep production has stabilised and indications are that some of our main competitors will have increased output this year. These are challenges that the industry needs to address. It is not just up to the processors or marketers to do this, sheep farmers have an important role in delivering a high quality well finished product that meets the market specification. There are huge changes that can be made at farm level to increase output and drive profitability even in times when the markets are under pressure. The Teagasc Profit Monitor Analysis carried out for sheep farms show that there is a difference in net margin terms between flock in the top 1/3 and the bottom 1/3 of €78 per ewe (2011 Profit Monitor Analysis). For a ewe flock rearing 1.5 lambs per ewe joined that is a difference of €2.48 per kg of lamb carcase sold.

Sheep Technology Adoption Programme (STAP)

The launch of the Sheep Technology Adoption Programme (STAP) is a positive step towards encouraging farmer participation in discussion groups. Teagasc, currently, has 30 sheep discussion groups with approximately 600 members and it is anticipated that by the 1st of March that this number will have grown three fold accommodating approximately 1,800–2,000 sheep farmers nationally. Teagasc strongly recommend that sheep farmers give serious consideration to joining STAP, not just for the €1,000 payment but for the several thousand euro worth of new technologies and practices that each member can implement as a result of participating in such a programme.

BETTER Farm Programme

The Teagasc Sheep BETTER farm programme is now entering its fifth year. During this time Teagasc have collected and analysed significant quantities of sheep performance and financial data and have assisted these farmers to implement programmes that have delivered in terms of increase output, cost reductions and established the effectiveness of the anthelmintics used to treat sheep for parasitic gastro enteritis (PGE). The BETTER farm participants have agreed to facilitate discussion group visits throughout the year and this year we propose to hold a number of open days on the various farms. These events will be advertised in the Teagasc sheep newsletters and in the national press. We strongly recommend that farmers consider attending these events to view how new technologies have been adopted on these farms.

Teagasc Sheep Programmes

Advisory Programme

The Teagasc Advisery programme offers a huge range of services to the sheep industry. At individual farm level Teagasc advisers are engaged in providing one-to-one advice on a host of technical issues ranging from, practical husbandry advice, scheme related advice, farm profitability (Teagasc Profit Monitor), farm nutrient planning, ration formulation and animal health issues. At local level, County and National level Teagasc staff are involved in group and public events such as discussion groups, seminars, farm walks, mart demonstrations and large scale public events such as Sheep 2012, the National Ploughing Championships and this conference today.

Research Programme

Despite significant cut backs in terms of staff numbers Teagasc have been fortunate to receive permission to appoint two new researchers, Drs. Phil Creighton & Noirin McHugh in recent years. Teagasc Research programmes are looking at important production related issues, parasitology, grazing strategies, ewe nutrition, breeding ewe lambs, genetics, systems, grass / clover varieties and this year a new experiment is starting looking at lamb quality/taste issues. Again Teagasc doors are open and sheep farmers are actively encouraged to visit Athenry to see on-going projects and provide feedback.

Education Programme

Teagasc delivers a detailed sheep programme through both the Teagasc and Private Agricultural Colleges and in collaboration with some of the Institutes of Technology (ITs). The entire sheep curriculum has recently been revised to provide the next generation of sheep farmers with the most up to date knowledge on sheep husbandry and management skills. Students participating in sheep courses are strongly encouraged to visit open days and participants in the BETTER farm programme. Agricultural Colleges are used by the advisory services for in-service training days and to achieve integration between our Education and Advisory and Research programmes**.**

Teagasc Collaboration

Teagasc staff collaborate with a wide variety of organisations. Today's event is an example of such collaboration with members of the Irish sheep industry brought to a highly technical conference with the assistance of International Speakers from the UK & France. The financial support from some of the key pharmaceutical & feed manufacturers in conjunction with some other agencies (UCD, Bord Bia, Irish Farmers Journal and IFA) involved in supporting this Sheep Conference is much appreciated. It is important that as a relatively small industry worth approxmately €300 million annually to the Irish economy effective collaboration and the pooling of resources to achieve the maximum outcome for the industry and its stakeholders takes place. Teagasc is committed to this principle and today's conference and the very successful Sheep 2012 held last June, are testament to this effort.

NOTES:

NOTES:

NOTES:


114

Modern Printers: 056 7721739

Contact Details:

Teagasc Head Office
Head Office, Oak Park, Carlow
Tel: +353 (0) 59 9170200
Fax: +353 (0) 59 9182097
Email: info@teagasc.ie

www.teagasc.ie

NDP
National Development Plan 2007 - 2013

teagasc
Agriculture and Food Development Authority