Irish Grassland Association

SHEEP AND BEEF Information Book 2016

Sponsored by

GENE IRELAND® Breeding future Profits

Mullinahone Co-op

Follow us on

Irish Grassland Association IGA

@IrishGrassland

Irish Grassland Association

CORPORATE MEMBERS 2016

abp Food Group
Acorn
Advanced Fertilizers
AIB
Allen Nutrition

A.W. Ennis
Aurivo
BASF The Chemical Company
Bank of Ireland
Barenbrug
Barryroe

Dairygold
Dairymaster
Dawn Meats
DeLaval
Department of Agriculture, Food and the Marine / An Roinn Talmhaíochta, Bia agus Mara
Devenish Nutrition the agri-technology company

Durapak
FBD
Farm Direct Purchasing Group
Irish Independent farming
FitzGerald Solicitors

Grassland AGRO
Greenvale Animal Feeds
Hygeia
ICBF.com
IFAC Accountants Business & Taxation Specialists

Keenan
Kepak Group
Buddy Kiernan Milling
Stewarts Animal Feeds
Lallemand Animal Nutrition
Lakeland Dairies
Lely

Nutribio Precision Nutrition
Kerry Agribusiness
O'Donovan Engineering
Ornua
Premier Molasses Delivering Solutions
Progressive Genetics

Town of Monaghan Co-Op
volac
WEXFORD MILK PRODUCERS
Whelehan Crop Protection
Yara
zoetis

Irish Grassland Association

CORPORATE MEMBERS 2016

Want to have your company logo on this page?
Contact the Irish Grassland Association office today...

Cookstown, Kells, Co. Meath, Ireland. Tel: (087) 96 26 483
General Information: secretary@irishgrassland.com www.irishgrassland.com

The Irish Grassland Association is a registered charity ref no CHY 20445

SHEEP AND BEEF
Information Book 2016

Sponsored by

PastureBase Ireland – Capturing Grassland Data on Irish Drystock Farms

Micheál O'Leary, Anne Geoghegan & Michael O'Donovan

Animal and Grassland Research & Innovation Centre, Teagasc, Moorepark, Fermoy, Co Cork.

Summary

- Drystock farms recording farm covers regularly on PastureBase Ireland (PBI) have grown between 10.5 – 12.3 t DM/ha/year over the past three years (2013-15).
- The variation between farms in grass DM production was from 9.1 t DM/ha to 14.7 t DM/ha
- Spring DM production is variable on drystock farms. Top producing drystock farms are growing 1.7 t DM/ha with lower producing farms only growing 0.3 t DM/ha in spring.
- The level of spring grazing must increase on drystock farms.
- Autumn closing date has a very significant impact on what level of grass is available the following spring. Each week delay in closing in autumn, spring grass accumulation is reduced by 77 kg DM/ha.
- There are approximately 200 drystock farms on PBI, there are over 100,000 drystock farms in Ireland with >4,000 fulltime farming. The number of farms measuring needs to increase dramatically to improve grazing management performance.

Introduction

The strong reputation of Irish grass fed beef and sheep production in traditional markets is an asset which can be further exploited. The potential to achieve high levels of lifetime gain from grazed grass allows Irish farmers a major competitive advantage over many of their European counterparts. On average the cost of producing a kilogram of liveweight gain from grazed grass is 80-85% less when compared to an intensive concentrate based system. Every extra tonne of grass utilised on a drystock farm is worth an addition €100/ha.

PastureBase Ireland has been in operation since January 2013. At this stage significant trends in grass dry matter (DM) production and grazing management are becoming evident from commercial farm data. PastureBase Ireland is a web-based grassland management tool incorporating a dual function of grassland decision support while collecting and storing a vast quantity of grassland data from dairy, beef and sheep farmers in Ireland in a central national database. At present the vast majority of farms recording measurements on PBI are dairy farms, with drystock farms only accounting for 10 - 15% of the population.

PastureBase Ireland is informing us that farmers need to have a good handle on current grass supply in order to manage grass well. Without a good knowledge of farm covers, grass demand or grass growth, it is very difficult to manage grass correctly in any grazing system. The crucial point on any farm is utilising the feed resource inside the farm gate. A farm that is dependent on imported feed is exposed in the current volatile environment.

The PastureBase Ireland database stores all grassland measurements within a common structure. This allows the quantification of grass growth and DM production (total and seasonal) across different enterprises, grassland management systems, regions, and soil types using a common measurement protocol and methodology. The background data such as paddock soil fertility, grass/clover cultivar, aspect, altitude, reseeding history, soil type, drainage characteristics and fertiliser applications are also recorded.

Grassland performance on farms

Figure 1 shows the annual DM production data from drystock farms across the country in 2015. These farms have >25 weekly farm walks completed on PBI. In 2014, the average grass DM production on drystock farm was 11.8 t/ha which was a 1.3 t DM/ha increase from the previous year which was anticipated as 2014 was a superior year for grass growth. Mean DM production of drystock farms who completed >25 walks in 2015 shows that there was an increase of 0.5 t DM/ha (12.3 t DM/ha) when compared with DM production in 2014.

Investigating the annual DM production further, it shows that the range in DM production that existed between drystock farms in 2015 was large. Some drystock farms only produced 8 - 9 t DM/ha while, the top drystock farms on PBI exceeded 14 t DM/ha, with some farms achieving greater than 8 grazings on the grazing platform (comparable performance of dairy farm). It is clear that on drystock farms, grass production levels can be similar to that of dairy farms. However the farm system must be focussed on using grass efficiently and needs to be set up to do so.

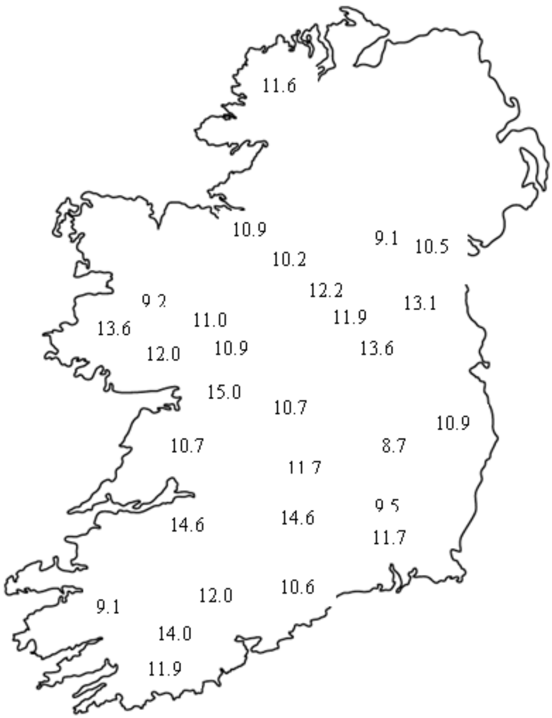


Figure 1. Grass dry matter production from PastureBase Ireland drystock farms across the country in 2015

Why and how does this amount of variation in grass production occur on farms? From the data we have been collating on PBI over the last three years trends are beginning to be seen in growth rates which are directly related to grazing management. While soil type has an impact, PBI data can show farms in the midlands and northwest producing higher quantities of grass DM than those in the south. Obviously, good grazing management can overcome many issues with regard to grass production on farms, a trend that is also evident on dairy farms.

Table 1. Total dry matter production (t DM/ha) from drystock farms from PastureBase Ireland grass recordings in 2014 and 2015.

2014	**Mean**	**Max**	**Min**	**Range**
Total DM production (t DM/ha)	11.8	14.7	8.7	6.0
Grazing DM production (t DM/ha)	10.3	15.1	8.1	7.0
Silage DM production (t DM/ha)	1.5	3.0	0.2	2.8
No. of grazings per paddock	5.0	6.9	4.0	2.9
2015				
Total DM production (t DM/ha)	12.3	14.6	9.1	5.5
Grazing DM production (t DM/ha)	9.8	12.7	7.2	5.5
Silage DM production (t DM/ha)	2.4	4.6	0	4.6
No. of grazings per paddock	5.4	8.1	3.9	4.2

Taking a more in-depth look at why some farms are able to produce high quantities of grass it was clear from the analysis that, delivering more grazings from each paddock during the season is key driver of success. On a high proportion on drystock farms the number of paddocks is inadequate, leading to excessively high paddock area. As a consequence, livestock are grazing these paddocks for too long (residency time is up to two weeks). The productivity of these paddocks is then significantly reduced. Where regrowths are not protected, they are being continually regrazed, nitrogen application is not up to date and rotation length is non-existent. Figure 2 shows the relationship between the number of paddocks per farm and the total number of grazings achieved per farm. PastureBase Ireland has identified that the advantage of creating one new paddock on a farm will give five extra grazings on the farm for the year. As a consequence of sub-dividing a farm into paddocks of adequate area, the number of grazings will increase in conjunction with DM production.

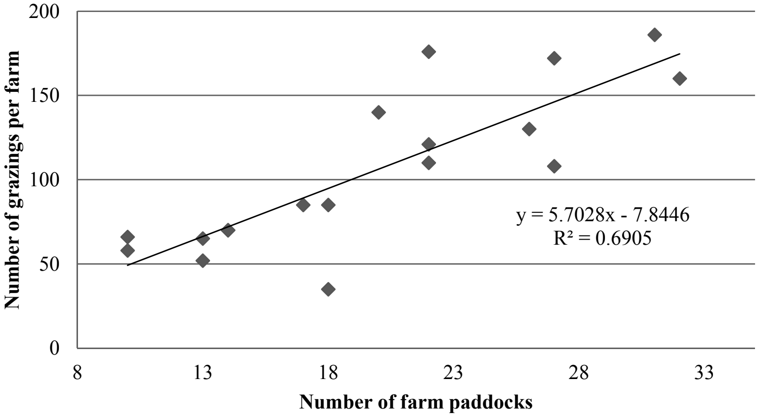


Figure 2. The number of paddocks per farm and its association with the total number of grazings per farm

Figure 3 shows the relationship between the number of grazings achieved per paddock and the associated DM production (data from dairy farms). This highlights that every extra grazing achieved per paddock will increase DM production by 1,385 kg DM/ha. It is critical that drystock farms sub-divide existing paddocks into smaller areas to permit better grassland management practices. Paddock residency should be no longer than 3 - 4 days on drystock farms during the mid-season. Any period longer than this will result in underperforming swards and poor live weight gains.

Reseeding low producing paddocks and minimising the variation in grass productivity between paddocks are also key aspects for a farm to grow more grass. On high grass-producing farms, variation in grass DM production between paddocks tends to be small. One of the strengths of PBI is that on-farm grass DM production can be quantified and classified into the different seasons for each paddock. This data enables farmers to target paddocks that have the greatest potential to increase grass growth.

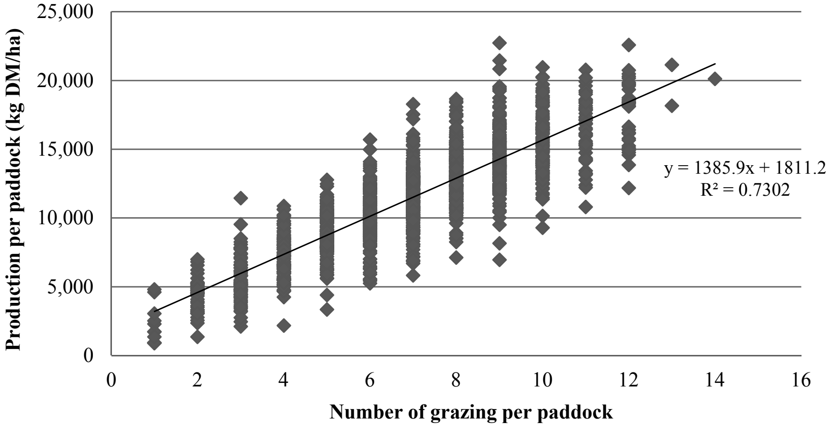


Figure 3. The number of grazing achieved per paddock and annual grazing dry matter production

Autumn grazing management

Closing date in the autumn, and timing and level of spring nitrogen fertiliser application are the two most important management factors influencing the supply of grass in early spring. In autumn 2015 over 33% of drystock farms delayed the closing of paddocks. In late October – early November these farms closed with an average farm cover below optimum (<600 kg DM/ha). As a result the supply of spring grass was significantly reduced.

The two main objectives of autumn grazing management are:

1. To maximise the proportion of grazed grass in the animal diet
2. To finish the grazing season with the desired average farm cover ensuring there will be sufficient grass for early turnout the following spring.

Weekly grassland measuring and budgeting are essential to ensure that these objectives are achieved. Usually from mid-August onwards, the entire farm is available for grazing. Building up grass covers to prolong the grazing season into October/November is necessary in order to maintain animals at grass in late autumn.

PastureBase Ireland allows an investigation of the effects of autumn closing date on spring grass supply. Previous on-farm studies and experimental work indicate that the date on which to begin closing paddocks in autumn for spring grazing was 10 October. O'Donovan *et al*. (2002) found that for every day delay in closing after 10 October spring grass supply was reduced by 15 kg DM/ha. Figure 4 show a range of autumn closing dates from 2 October to 23 November. What this graph clearly shows is that for each week delay in closing in autumn, spring grass accumulation is reduced by 77 kg DM/ha. Autumn closing date has a very significant impact on what level of grass is available the following spring. What is really interesting from this data is the difference in grazing dates in spring were very close to one another; the mean date for grazing 2 October closed swards was 17 March.

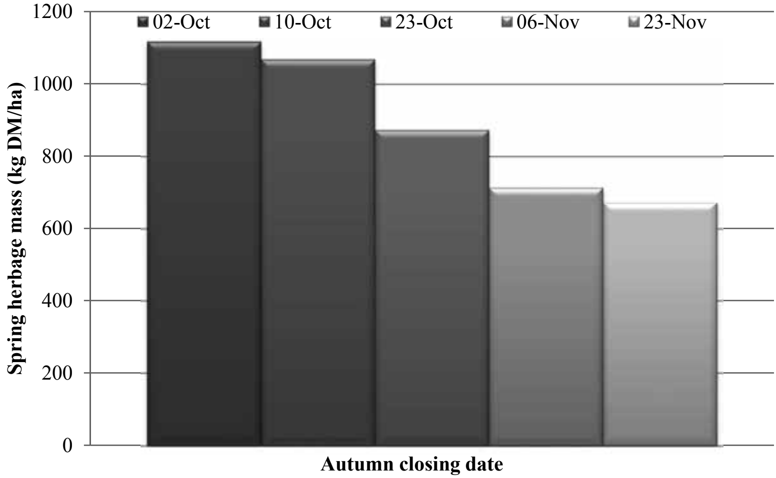


Figure 4. The effect of autumn closing date on spring grass accumulation.

Increasing grass growth with spring grazing

Early spring grazing has been recommended on dairy farms due to its effect on overall grass productivity; growth rates are usually greater in spring grazed swards compared to ungrazed swards. Kennedy et al. (2005), in a comparison of early spring grazing versus late turnout, found that February grazed swards subsequently grew more grass in the second rotation than ungrazed swards (90 v 82 kg DM/ha, respectively). More recently, PBI data for 2015 shows that farms which have completed the first grazing rotation in advance of 10 April have grown substantially more grass than farms which finished the first rotation after 10 April. Mean spring grass production on drystock farms from 1 January to 10 April was 1,042 kg DM/ha for farms where the first rotation finished on 10 April compared to 833 kg DM/ha for farms where the first rotation finished after 10 April. This is a 15% increase in grass DM production by advancing the finish date of the first rotation. Most farms in Ireland are finishing the first rotation too late and are losing out on this valuable spring grass.

Why is spring grassland management a concern on Irish drystock farms

- 66% of drystock farms had little/no stock out grazing by March 1st
- The average area grazed on 17 March was 20% - well below target of 40%
- Top producing drystock farms are achieving 15% grazed by 1March and 50% by 17 March
- Only 10% of farms finished the first rotation by 10 April
- On 25 April, 45% of farms were finished the first rotation
- Farms that finished the first rotation before 10 April grew more spring grass than farms that finished the first round after 10 April
- On an annual basis, farms that finished the first rotation before 10 April grew 1.1 t DM/ha more in 2015 (12.2 v 11.1 t DM/ha) than farms that finished the first rotation after 10 April

There is a major concern that on farms which do not target early turnout or finish the first rotation late, there will be a build-up of grass. The aim in spring is to increase the proportion of grass in the diet of the grazing animal while at the same time budgeting so that there is enough grass until the start of the second grazing rotation in early April. Spring grazing should start in February/March and continue until early April. This first rotation end date can be brought back on many drystock farms.

This varies from farm to farm but the overriding aspect of grazing management is to make good use of spring grass. If turnout is too late on farms and the first rotation is too long, pre-grazing yields will be too high, grass quality will deteriorate and achieving a post grazing residual of 4cm will be difficult as utilisation will be reduced. Advantages of finishing the first rotation on time include;

- The first paddock grazed in the second rotation will have an adequate cover for grazing of 8 - 9cm (1000 - 1200 kg DM/ha)
- There will be 18 – 21 days of grass on the farm as recommended
- A wedge of grass will be created, highest covers on paddocks grazed early in the spring and lower covers on paddocks grazed last in the rotation
- Early spring grazing increases grass quality in the second, third and subsequent grazing rotations
- Greater animal performance through higher milk yields and weight gains.

Fertiliser/Slurry application in spring

Nitrogen fertiliser can provide a boost to spring grass growth, allowing for more cattle to be turned out earlier. Soil temperatures need to be at least 5°C before there is an adequate response to N and the date at which this occurs can differ from year to year.

In good growing conditions, 1 kg of N has the ability to grow 10 kg of grass DM during February, while during March this can increase to 15 kg of grass DM in adequate growing conditions. The general recommendation is to apply N fertiliser 3 - 4 weeks before your expected turnout date.

Target your earliest N applications on the paddocks and fields that have the greatest production potential – predominately perennial ryegrass swards – with 5cm to 8cm of grass that has good fertility (P, K & lime). Apply no more than 23 units N per acre for the first application.

In order to get the maximum value out of the N in cattle slurry, the majority of it should be spread in the spring when the weather conditions are favourable as utilisation of slurry is six fold during this period. When weather conditions are suitable, apply 2,000 to 2,500 gallons of slurry to paddocks with little or no grass covers. These will be the last to be grazed in the first rotation. Paddocks that have heavy covers of grass should not get slurry until immediately after they are grazed. When fields are grazed and closed for silage, apply between 2,500 and 3,000 gallons of cattle slurry per acre before applying any inorganic N. Reduce the amount of inorganic N spread by taking into account the units that have been supplied in the slurry.

Why are some drystock farms producing high quantities of grass?

1. Rotational grazing system – paddock system
2. Good farm infrastructure i.e. adequate size paddocks
3. Maximising spring grazing – early turnout and finishing the first rotation on time
4. Addressing soil fertility annually
5. Grass budgeting – completing a farm cover weekly (>25 walks/year)
6. Making decisions weekly on the information generated after each farm cover
7. Achieving a high number of grazings per paddock per year – top farms achieving >8 grazings per paddock per year.

Monthly grazing targets

	Pre-grazing height (cm)	Pre-grazing yield (kg DM/ha)	Target days ahead
February/March	8-9cm (6-7cm)	1,000-1,250	First Rotation 45 days
April	8-10cm (7-9cm)	1,000-1,500	18 – 21 days
May	9-10cm (7-9cm)	1,250-1,500	12 – 14 days
June/July	9-10cm (7-9cm)	1,250-1,500	12 – 14 days
August	9-10cm (7-9cm)	1,250-1,500	25 – 30 days (15 – 20 days)
September	10-12cm (8-10cm)	1,500-2,000	35 – 40 days (25 – 30 days)
October/November/ December	<12cm (<12cm)	<2,000	Closing paddocks from 10 October (close paddocks from late October, 30 – 40 days)

*Guidelines are based on livestock grazing to a residual of 4cm and each cm above the residual is equal to 250 kg DM/ha for beef farm and 300 kg DM/ha for sheep farms (details in brackets for sheep farms only)

Conclusions

PastureBase Ireland, the national grass database, will allow the industry to move forward with better understanding of the performance of drystock farms. It is clear that Ireland has incredible potential to increase annual DM production with a better focus on grazing management. PastureBase Ireland has identified that all farms need to focus more on early spring grazing. Farms that graze early in the season will stimulate higher grass growth rates earlier (late February/March) and will achieve higher annual DM production, increased milk yield, liveweight gain and overall improved farm profitability.

References

Kennedy, E., O'Donovan, M., Murphy, J.P., Delaby, L. and O'Mara, F.P. 2005. Effects of grass pasture and concentrate based feeding systems for spring calving dairy cows in early spring on lactation performance. Grass and Forage Science 60: 310-318.

O'Donovan, M., Dillon, P., Reid, P., Rath, M. and Stakelum, G. 2002. A note on the effects of herbage mass at closing and autumn closing date on spring grass supply on commercial dairy farms. Irish Journal of Agricultural and Food Research 41: 265-269.

Do mixed species swards have a role to play in pasture based sheep production systems?

T.M. Boland, C. Grace, S. Lott, R. Fritch, H. Sheridan and M.B. Lynch

University College Dublin, School of Agriculture and Food Science, UCD Lyons Research Farm, Lyons Estate, Celbridge, Naas, Co. Kildare W23 ENY2.

Abstract

Multispecies swards have potential for increased biomass production at lower nitrogen (N) inputs and thus have potential to reduce N requirements in pasture-based lamb production systems. Four sward types were investigated in a farmlet study; perennial ryegrass (Lolium perenne) only (PRG), receiving 163 kg N per hectare per year (kg N/ha/y); PRG and white clover (Trifolium repens) mix at 90 kg N/ha/y (PRG+WC); six species mix (two grasses, two legumes, two herbs) at 90 kg N/ha/y (6S) and a nine species mix (three grasses, three legumes, three herbs) at 90 kg N/ha/y (9S). Farmlets were stocked with 30 twin-rearing ewes at a stocking rate of 12.5 ewes/ha from four weeks post-partum until lambs were slaughtered at 45 kg liveweight under rotational grazing management. Lambs were weighed fortnightly and average daily gain (ADG) calculated. Pasture herbage mass was measured before and after each grazing event by taking three quadrat (0.5 x 0.5 m quadrat) cuts and harvesting to 4cm. The harvested herbage was weighed and retained for DM determination. Compared to lambs grazing PRG, lambs grazing the 6S had higher ADG from birth to slaughter (279 and 238 grams per day (g/day) respectively, $P>0.01$), higher weaning weights (36.3 and 32.3 kg respectively, $P>0.01$) and subsequently reduced days to slaughter (151 and 176 days respectively, $P>0.01$). To conclude, the 6S mix supported higher animal performance than PRG swards and there was no significant effect of sward treatment on annual herbage production.

Introduction

Irish agriculture has a competitive advantage in terms of grass growth, however many of the advances in grass production can be attributed to simplification and homogenisation of grass swards, facilitated through the availability of relatively affordable fossil fuel derived products e.g. inorganic fertilisers. Future challenges to global agricultural production will include the lowering of GHG emissions and adoption of grassland husbandry techniques that facilitate the existence of greater levels of biodiversity and reduce reliance on fossil fuels, coupled with ever increasing demand for production of foods of animal origin.

Food Harvest 2020 set out targets of a 20% increase in output value from the Irish sheep industry. Increasing output per ewe will be one of a number of key drivers to achieving this target. Lamb output in Ireland has remained static or even decreased since the 1950s and output currently stands at 1.3-1.4 lambs weaned per ewe. (Boland and Crosby, 2006 ; Breen et. al., 2012). Data from Teagasc indicate that increased carcass production per ha can be achieved through increased stocking rate and weaning rate (Earle et al., 2015).

The Teagasc Sectoral Roadmap has set ambitious future targets for the lowland sheep sector: to increase stocking rates from the current 7.2 ewes per hectare, to 9 ewes/ha by 2020 with a future target of 13 ewes per hectare and to increase the percentage of lambs finished by October to 70%. However with these increased stocking rates the nitrogen applied per hectare will have to increase to support the stocking rate from the current application of 73.5kg N/ha to 158kg N/ha as increased stocking rate is generally associated with an increased demand for and input of nitrogen fertiliser (Whitehead, 1995) in order to support increased herbage dry matter production, in the absence of the inclusion of nitrogen fixing legumes in the sward. Recent work from our institution indicates that the inclusion of a diverse range of species (grasses, herbs and legumes; multi species swards) will increase dry matter production compared to a perennial ryegrass only sward, even where the multi species swards receive substantially lower nitrogen inputs (Grace et al., 2015: Nyfeler et al., 2011) while having a higher feeding value for grazing animals (Kemp et al., 2010) thus representing a potential alternative to perennial ryegrass (PRG) only swards.

Existing data from *in vitro* studies show that both chicory and plantain have the potential to reduce methane emissions compared to a perennial ryegrass only sward (Roca et al., 2010). In line with EU policy, Ireland's greenhouse gas emissions must reduce by 30% compared to 2005 levels by 2030 (European Council 2014) so investigation of the role of multispecies swards in achieving this is merited.

The objective of this study is to examine the effect of grazing multispecies swards compared to PRG only swards on lamb performance and herbage production under intensive rotational grazing management.

Materials and Methods

A series of three experiments were established to investigate the potential of multispecies swards under Irish conditions. All experiments were carried out at UCD Lyons Research Farm (53˚17 N, 6 ˚31 W, and 80.5 m above sea level)

Experiment 1

In August 2013, monocultures of PRG and multispecies swards mixtures were sown in 1.95 x 10m plots. The soil type of the chosen experimental site was a silty-clay loam, classified as a grey brown podzolic soil. The cropping history of the site was continuous tillage. In preparation for sowing, the site was sprayed with the herbicide glyphosate at a rate of 3.0 l/ha (Roundup, Monsanto), it was power harrowed and was tilled to a depth of 15 cm and tilled using a one-pass system and the seed was hand-sown. Nitrogen (30 kg/ha in the form of ASN), Phosphurus (40 kg/ha in the form of superphospate (16% phosphate)) and Potassium (110 kg/ha in the form of Muriate of Potash (50% potassium)) was applied uniformly across all plots based on the soil tests taken prior to sowing.

The experimental layout followed the simplex design as described by Kirwan et al. (2007) and was designed to provide; (i) a wide range or grass, legume and herb proportions in the swards and, (ii) four different rates of fertiliser N. Eight pasture mixes were selected using a constrained simplex-centroid design with different proportions of nine species from three functional groups; three grasses, three legumes and three herbs (Figure 1). The constraint imposed on the design was that there must be at least 40% grass in each mixture (no more than 60% legume or herb) (Figure 1). The three grasses were PRG (*Lolium perenne*), timothy (*Phleum pratense*) and cocksfoot (*Dactylis glomerata*), the three legumes were white clover (*Trifolium repens*), red clover (*Trifolium pratense*) and birds foot trefoil (*Lotus corniculatus*), and the three herbs were plantain (*Plantago lanceolata*), chicory (*Cichorium intybus*) and yarrow (*Achillea millefolium*). The eight pasture mixes were repeated at three levels of species richness, with one, two or three species per functional group; for example, level one had one species from each functional group and level two had two species from each functional group and level three had three species from each functional group (eight mixes x three levels of richness = 24 mixes in total). The design was replicated at four different nitrogen (N) fertiliser application rates (0, 45, 90 and 135 kg N/ha/y), resulting in a total of 96 plots (24 mixes x 4 N rates).

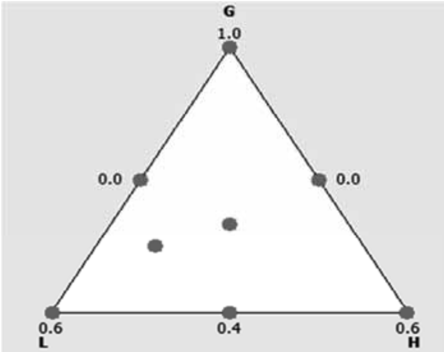


Figure 1. The simplex triangle showing the eight proportions of the functional groups (G=Grass, L=Legume, H=Herb) with constraint imposed.

In addition to the simplex experiment, there was a replicated experiment, with four mixtures all receiving 90 kg N/ha/y. The mixes (replicated 4 times) were; a PRG only mixture a PRG and white clover mixture, a simple mix with 6 species (PRG, timothy, white clover, red clover, plantain and chicory) and a complex mix with nine species (PRG, timothy, cocksfoot, white clover, red clover, birdsfoot trefoil, plantain, chicory and yarrow). This experiment was compared to a PRG only sward receiving 250 kg N/ha/yr.

Experiment 2

The aim of this experiment is to examine the effect of grazing compared to simulated grazing on multispecies swards and PRG only swards.

In August 2013, monocultures of PRG and multispecies swards mixtures were sown in 1.95 x 10m plots (referred to hereafter as the simulated grazing plots or SG) and a replication of these were sown in 10x10m plots (referred to hereafter as Actual grazed plots or AG) The soil type of the chosen experimental site was a silty-clay loam, classified as a grey brown podzolic soil. The cropping history of the site was continuous tillage. In preparation for sowing, the site was sprayed with the herbicide glyphosate at a rate of 3.0 l/ha (Roundup, Monsanto), it was power harrowed and was tilled to a depth of 15 cm and tilled using a one-pass system and the seed was hand-sown. Nitrogen (30 kg/ha in the form of ASN), Phosphurus (40 kg/ha in the form of superphospate (16% phosphate)) and Potassium (110 kg/ha in the form of Muriate of Potash (50% potassium)) was applied uniformly across all plots based on the soil tests taken prior to sowing.

There were two defoliating treatments applied to this experiment, simulated grazing (SG) and actual grazing (AG) with four mixtures all receiving 90 kg N/ha/y sown in a randomised complete block design arranged in a 2 x 5 factorial. The mixes (replicated 4 times) were; a PRG (*Lolium perenne*) only mixture, a PRG and white clover mixture (*Phleum pratense*), a simple mix with 6 species (PRG, timothy (white clover (*Trifolium repens*), red clover (*Trifolium pratense*), plantain (*Plantago lanceolata*), and chicory (*Cichorium intybus*)) and a complex mix with nine species (PRG, timothy, cocksfoot, white clover, red clover, birdsfoot trefoil (*Lotus corniculatus*), plantain, chicory and yarrow (*Achillea millefolium*). A control treatment consisting of a PRG only sward receiving 250 kg N/ha/yr was also included.

Experiment 3

A complete randomised block design was used to investigate the effect of four sward treatments on lamb performance and herbage production. Four experimental farmlets were established in late August/early September 2014. The four treatments were as follows: (i) PRG only, receiving 163 kg N/ha/yr (PRG); (ii) PRG and white clover sward receiving 90 kg N/ha/yr (PRG+WC); (iii) a six species mix containing two grasses (PRG and timothy (*Phleum pratense*)), two legumes (white clover and red clover (*Trifolium pratense*)) and two herbs (plantain (*Plantago lanceolata*) and chicory (*Cichorium intybus*) receiving 90 kg N/ha/y (6S); (iv) a nine species mix containing three grasses (PRG, timothy and cocksfoot (*Dactylis glomerata*)) three legumes (white clover, red clover and birdsfoot trefoil (*Lotus corniculatus*)) and three herbs (plantain, chicory and yarrow (*Achillea millefolium*)) receiving 90 kg N/ha/yr (9S). Each farmlet consisted of 2.4 hectares (5 paddocks) which were rotationally grazed at stocking rate of 12.5 ewes/ha or 30 twin-rearing ewes per treatment. The target pre-grazing herbage mass was 1,200 kg DM/ha (4 cm above ground level) for the duration of the experiment and the target for post grazing sward height (PGSH) was 4 cm. Lambs were weaned at 14 weeks old. Post weaning, a leader follower system was operated with lambs grazing ahead of the ewes. Lambs were removed from paddocks upon achieving a PGSH of 5 cm, with ewes introduced to achieve a PGSH of 4 cm. Herbage mass was recorded before and after each grazing event by taking three quadrat (0.5 x 0.5 m quadrat) cuts and harvesting to 4 cm. The harvested herbage was weighed and retained for DM determination. Herbage samples were taken prior to each grazing event and were separated to functional group level (grass, legume, herb components) by manual separation. Lambs were weighed fortnightly using a portable electronic scales (Prattley, Temuka, New Zealand) and liveweight recorded electronically (Tru-Test Group, Auckland, New Zealand) and were drafted for slaughter on reaching 45 kg of liveweight. Data were analysed as a completely randomized block design using the mixed model procedure (PROC MIXED) in SAS (SAS, version 9.4, Inst. Inc., Cary, NC).

Results

Experiment 1

The effect of N application on the functional groups is shown in Figure 2. There was a linear response to nitrogen ($P<0.05$) across all mixtures and all functional groups in 2014 especially when herbs and grasses are included in the mixture. Only the grass mono-culture and the 60% herb treatment had lower DM yield than PRG at 250 kg N. All other mixtures out yielded PRG at 250 kg N at all levels of nitrogen application.

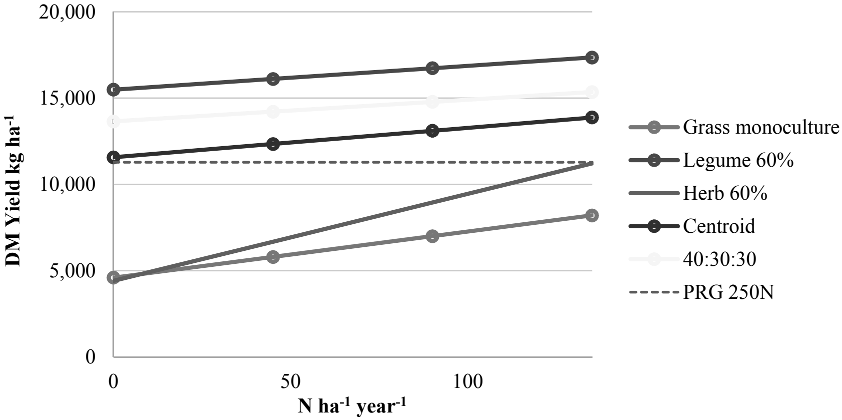


Figure 2. The effect of functional group and annual nitrogen input on annual DM yield (kg DM/ha)

Figure 3 shows that multispecies mixtures receiving 90 kg N/ha/year have the potential to give increased DM yield compared to PRG swards receiving 250 kg N/ha/year. Each mixture out yielded PRG at 90kg N/ha (P<0.001) at 250kg N/ha (P<0.001). Perennial ryegrass & white clover mix was highest yielding and out yielded all other treatments (P<0.05). There was no difference in the DM yield from the simple and complex mix at 90kg N/ha.

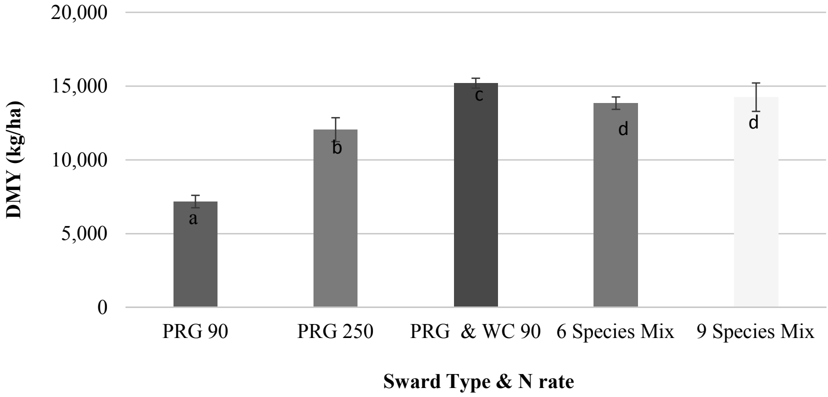


Figure 3. The effect of sward treatment on the DM production in kg DM/ha of the replicated experiment

Experiment 2

In 2015, the PRG at 90 kg N/ha/yr treatment produced significantly less herbage (4.7 t for the SG plots and 5.9 t for the AG plots), compared to all other treatments (P<0.05) but the defoliation treatment had no effect on DM production (P>0.05). Defoliation method influenced herbage DM production. The AG defoliation reduced (P>0.05) the DM yield of the PRG and white clover, the simple mix and the complex mix compared to SG defoliation, but a similar response was absent in the PRG treatments where no impact of defoliation method was observed (P>0.05).

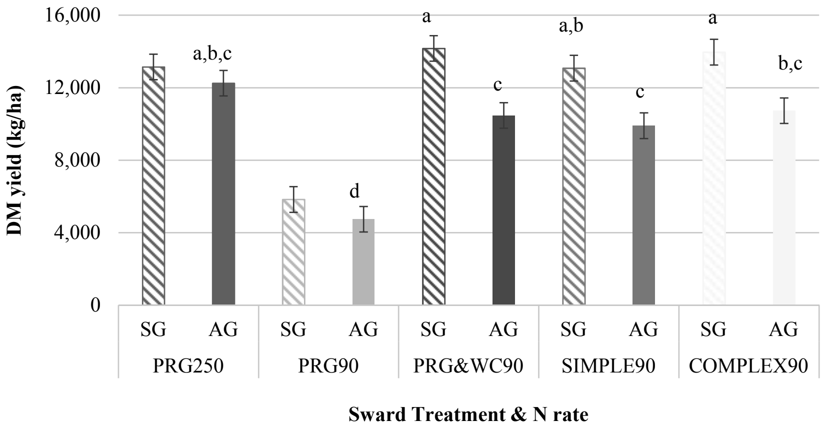


Figure 4. The effect of sward treatment and N rate on the DM yield (kg/ha) of the SG v's AG plots in 2015

Experiment 3

Ewe weaning or breeding weights were not affected by treatment (Table 1). Ewe weaning BCS was not affected, however the ewes grazing the 9 species mix had significantly higher BCS at breeding (P<0.05) than ewes grazing the other treatments.

Table 1. The effect of treatment on ewe liveweight and BCS (LSM+/-SEM)

	PRG	**PRG & WC**	**6S**	**9S**	**SEM**	**P-Value**
Weaning weight (kg)	77	78	82	82	2.4	NS
Breeding weight (kg)	81	81	83	82	2.1	NS
Weaning BCS	2.9	3	3	3	0.73	NS
Breeding BCS	3.16[a]	3.15[a]	3.12[a]	3.29[b]	0.58	P<0.05

The effect of treatment on weaning weight, ADG from birth to weaning and birth to slaughter, days to slaughter, kill out percentage and carcass weight are presented in Table 2. Lambs grazing the 6S treatment had a higher weaning weight (36.3 kg) compared to all other treatments (P<0.05), while lambs offered the PRG had lower weaning weights than the 9S (P<0.05).

Lambs grazing the 6S sward had higher growth rates from birth to weaning compared to PRG and 9S (P<0.05) with PRG+WC intermediate. Both complex mixtures (6S and 9S) supported high ADG from birth to slaughter compared to PRG (P<0.05), with the 6S treatment also recording high birth to slaughter ADG compared to PRG+WC (P<0.05).

This resulted in reduced days to slaughter of 25 days for the 6S lambs compared to PRG lambs (P<0.01). The 9S lambs also reached slaughter weight earlier (P<0.05) than the PRG lambs without any change in carcass weight of kill out percentage (P>0.05).

Table 2. The effect of treatment on lamb weaning weight (kg), lamb growth rate from birth to weaning and birth to slaughter, days to slaughter, kill out percentage and carcass weight (kg) (LSM+/-SEM)

	PRG	**PRG+ WC**	**6S**	**9S**	**SEM**	**P-Value**
Weaning weight (kg)	32.3[a]	34.0[ac]	36.3[d]	34.4[bc]	0.77	<0.01
Growth rate (birth to weaning, g/day)	285[a]	291[ab]	303[b]	286[a]	8.3	<0.05
Growth rate (birth to slaughter, g/day)	238[a]	257[ac]	279[b]	260[c]	8.3	<0.01
Growth rate (weaning to slaughter, g/day)	201	205	223	202	12.5	NS
Days to slaughter	176[a]	165[ac]	151[b]	161[bc]	5.1	<0.01
Kill out %	44.5	44.5	44.2	44.3	0.45	NS
Carcass weight (kg)	20.3	20.7	20.2	20.3	0.22	NS

Individual faecal egg counts were determined fortnightly and lambs received anthelmintic treatment based on group parasite challenge. All lambs received anthelmintic treatment at 10 weeks of age to combat nematodirus infection, but subsequent anthelmintic treatments were administered in response to group parasite challenge as defined by FEC.

Table 3 shows the effect of treatment on lamb Trichostrongylus egg count (eggs/gram). Lambs grazing the 9S mix had the lowest FEC at 10 weeks of age which was significantly lower (P<0.05) than the FEC of the PRG and the PRG+WC lambs with the 6S lambs intermediate. Following this, lambs were dosed on a treatment basis when the treatment average FEC reached a target threshold. The duration from first anthelmintic treatment to the second was recorded. It took significantly longer for lambs grazing the 6S mix and the 9S mix to require a second anthelmintic treatment (50 and 71 days respectively) compared to 34 and 38 respectively for the PRG and the PRG+WC treatments (P<0.001).

Table 3. The effect of sward treatment on FEC (egg/gram) at 10 weeks of age and time to require second anthelmintic treatment

	PRG	PRG & WC	6S	9S	SEM	P-Value
Trichostrongylus (Eggs/gram)	361^{a}	355^{a}	276^{ab}	207^{b}	32.5	<0.05
Days to require 2nd treatment	34^{a}	38^{a}	50^{b}	71^{c}	3.0	<0.001

Summary and Conclusions

Data presented herein indicate that multispecies swards have the potential to increase herbage DM production when receiving low levels of N fertilisation (90 kg N/ha/year), compared to perennial rye grass only swards at 250 kg of N application. Care is required in interpretation of this finding however for two reasons. Firstly these plots were established on a site which had previously undergone cereal cropping for four years and as such low background N levels were present in the soil. This is a substantially different situation to permeant pasture which supports higher levels of background soil nitrogen. Secondly, this data presents the first year of a four year study and does not indicate whether or not the multispecies swards and their associated benefits in terms of increased DM production will persist over time.

In experiment 2 it noted that where swards contain a mixture of plant species, even a simple mixture of perennial rye grass and white clover, a reduced DM yield under actual grazing, compared to simulated grazing was recorded. This is worthy of consideration, when one considers the method used to assess the suitability of species for inclusion in grazing mixtures.

In experiment 3, multi species swards, whether they consisted of 6 species or 9 species, resulted in reduced days to slaughter for lambs grazing those pastures. This was achieved through higher growth rates from birth to weaning and birth to slaughter. These higher growth rates were also, at least partially, associated with a reduced parasite burden of these lambs.

Further investigation is required to determine the persistency of this response in subsequent grazing seasons and to elucidate the mechanisms responsible for the reduced parasite burden recorded in the current study

References

Earle, E., McHugh, N., Boland, T.M. and Creighton, P. 2015. The effect of stocking rate and prolificacy potential on carcass output and lamb performance from pasture based production systems. Proceedings of the Agricultural Research Forum 2015, Tullamore, Ireland.

Grace, C., Sheridan, H., Boland, T.M., Fritch, R, Kirwan, L. and Lynch, M.B. 2015. The Production potential of multispecies swards at varying annual nitrogen inputs in the post establishment year. Proceedings of the Agricultural Research Forum 2015, p36. Tullamore, Ireland

Kemp, P.D., Kenyon, P.R. and Morris, S.T. 2010. The use of legume and herb forage species to create high performance pastures for sheep and cattle grazing systems. Revista Brasilieria de Zootecnia, p169-174.

Kirwan, L., A. Lüscher, M.T. Sebastià, J.A. Finn, R.P. Collins, C. Porqueddu, A. Helgadottir,O.H. Baadshaug, C. Brophy, C. Coran, S. Dalmannsdóttir, I. Delgado, A. Elgersma, M. Fothergill, B.E. Frankow-Lindberg, P. Golinski, P. Grieu, A.M. Gustavsson, M. Höglind, O. Huguenin-elie, C. Iliadis, M. Jørgensen, Z. Kadziuliene, T. Karyotis, T. Lunnan, M. Malengier, S. Maltoni, V. Meyer, D. Nyfeler, P. Nykanen-Kurki, J. Parente, H.J. Smit, U. Thumm and J. Connolly. 2007. Evenness Drives Consistent Diversity Effects in Intensive Grassland Systems across 28 European Sites. Journal of Ecology 95: 530-539.

Nyfeler, D., Huguenin-Elie, O., Suter, M., Frossard, E., Connolly, J. and Lüscher, A. 2009. Strong mixture effects among four species in fertilized agricultural grassland led to persistent and consistent transgressive overyielding. Journal of Applied Ecology, 46: 683-691.

Whitehead, D. C. (1995). Grassland nitrogen. CAB International

Striving to get the best returns from my farm

John Pringle

Aughrim, Co Wicklow

Welcome

On behalf of myself and my wife Linda, I would like to welcome you today to our farm. We have three children – our daughter Lucy (aged 10) and twin boys Scott and William (aged 5). You could say our farm has become the minority in the area in recent years given the number of conversions to dairying that have taken place from suckler, sheep and tillage enterprises. I have always enjoyed working with sucklers and sheep and while there are many testing times I am committed to making the most of the farm and will continue on developing the major groundwork that my parents had put in place prior to me taking over. Farm gate prices and input costs have a huge influence on the profitability of both the sheep and suckler enterprises but unfortunately, we as farmers do not have the ability to influence these greatly.

The areas we can influence are largely inside the farm gate and this has been my focus in recent years. My farming system is not the finished article and there are many areas which require further improvements in the years ahead. Many of these improvements have been set in motion by seeing the experience of others through our local discussion group, farm visits or in discussions with my Teagasc B&T adviser Bob Sherriff. I hope that like me visiting other farms, you can take something useful from today's visit and equally important ask plenty of questions or suggest areas where you feel I could make improvements, so that I am also left with feedback.

Farming system

The farm extends to 56 ha and is laid out in one block. Land type can be described as relatively dry but as it extends to 650 feet above sea level at the highest point and as such it is vulnerable to late spring growth stemming from harsh east winds. Because of the dry land type the farm also faces a risk of burning up in a hot, dry summer. It is two fields deep and shaped in an L shape; this will be apparent when you are at the highest point in today's visit.

Irish Grassland Association

MEMBERSHIP APPLICATION FORM

PERSONAL DETAILS

(BLOCK LETTERS PLEASE)

Name ____________________________

Address ____________________________

____

____

____

Home number ____________________________

Mobile number ____________________________

Email address ____________________________

BTE Herd/Flock Number ____________________________

Please circle the appropriate information

Are you involved in — Dairy Beef Sheep

Do you wish to receive

IGA Newsletters — Yes / No

Annual IGA Journal — Yes / No

Conference Details on — Dairy Beef Sheep

Information updates via text — Yes / No

Please fill out this membership and direct debit form completely. Please use the three point check on the back page before you submit your membership form to us.

For office use only

EFT ☐ CRM ☐

This only applies to this Free Membership Offer Form and not the normal Membership Form.

SEPA I

SEPA Direct Debit Ma

By signing this mandate form, you au
and (B) your bank to debit your accou
you are entitled to a refund from your
within 8 weeks starting from the date

Debtor Name / Your Name *

Debtor Address / Your Address *

Town *

City *

County *

Debtor account number – IBAN *

Debtor bank identifier code – BIC *

Creditor's name *

Creditor identifier *

Creditor address *

Town *

County *

Country *

Type of payment *

Date of signature *

Please sign here *

Note: Your rights regarding the above
Please send this mandate to the cred

Direct Debit Mandate

Irish Grassland Association

ndate

Unique Mandate Reference (UMR) – to be completed by the Irish Grassland Association

ıthorise (A) the Irish Grassland Association to send instructions to your bank to debit your account
ınt in accordance with the instructions from the Irish Grassland Association. As part of your rights,
r bank under the terms and conditions of your agreement with your bank. A refund must be claimed
on which your account was debited.

Please complete all the fields marked *.

IRISH GRASSLAND ASSOC.

IE50SDD305846

COOKSTOWN
KELLS
CO. MEATH
IRELAND

Recurrent payment ☐ or One-off payment ☐

Signature(s)

e mandate are explained in a statement that you can obtain from your bank.
litor (Irish Grassland Association, Cookstown, Kells, Co. Meath.)

Would you like to get

1 years FREE* membership to the IGA?

Your attendance today includes 1 years free* membership for all new d/d members! Form's must be posted back to our office by 10th May 2016.

*This offer is available to all new direct debit memberships and is not in conjunction with any other IGA offer

Please fill out this membership and direct debit form carefully and completely. The Irish Grassland Association (IGA) is now SEPA compliant.

For this reason you may need to contact your local bank branch for assistance in locating some information for the direct debt form, e.g. debtor account number (IBAN) and debtor bank identifier code (BIC). Forms not fully completed cannot be accepted and your membership request will not be processed.

Please send fully completed signed form to
Irish Grassland Association, Kells, Co. Meath.

t:087 9626483
www.irishgrassland.com
Follow us on Facebook and Twitter

Irish Grassland Association

lift and temperatures will rise in the coming days and a clearer picture of the grazing system can be given at the farm walk.

Soil fertility

I have been working closely with Bob for the last few years on a number of practices to get the most from grazed grass. Application of lime has worked well in lifting the pH to 6.0 to 6.2 and potassium levels have also lifted gradually. Phosphorus on the other hand remains a challenge, as seems to be the case for many farmers in this area. It could be partly down to soil type and it has been difficult to improve despite using compound fertilisers and targeting slurry and dung on the lowest index areas. We will continue with the current plan but with higher P-content compound fertilisers to see if that works over the next few years. This year we have also started grass measuring with growth rates recorded on Teagasc's Pasturebase facility. The focus behind this is establishing what grass I am growing and what fields are not performing so that remedial action can be taken.

Fine tuning the system

Stock numbers are going to stay where they are at but I feel there are areas where I can push the current system further and where improvements can be made. This year the reseeding programme will hopefully include some alternative forage crops such as plantain and chicory. This is something other members in the discussion group are looking into and for me will hopefully address a lag phase in lamb drafting in July and August and take some pressure off building a bank of grass for autumn and winter grazing.

A new breeding policy incorporating Belclare and New Zealand/Irish Suffolk genetics into the foundation ewe flock (mixture of Texel, Suffolk, Border and Blue Leicester) is contributing, along with better grassland management and addressing mineral issues, to an increase in flock output. This year's mature ewe flock scanned 1.91lambs per ewe to the ram and a litter size of 1.98 for those in-lamb. This has increased from 1.70 to 1.76 lambs per ewe put to the ram in 2014 and 2015. In an ideal world it would stay at that level as it is a happy balance between achieving good output and not pushing it too far that it puts me under more pressure than I can manage at lambing.

Breeding programme

The use of New Zealand genetics are also leading to benefits with lambs born with more vigour and up faster to suckle. I want to be able to base decisions on accurate records rather than estimates in performance and for that reason have put the wheels in motion on flock recording. All lambs have been electronically tagged this spring and I am working through recording the entire flock using a TGM software package. I can quickly see what cows are not performing by looking at the calving report or quality of the calf but with over 300 ewes lambing it's a lot harder to identify the lower performing sheep. As I mentioned already, I have increased to the maximum number of stock I can carry and hopefully over the next few years I can improve performance and output by culling the lower performing genetics and replacing with ewes that best suit this system.

I am happy with how the ewe lamb flock is performing with scanning generally averaging around a lamb per ewe to the ram after a three to four week breeding season. At present replacements are selected at the first draft of lambs from twin births. Now I'll hopefully be able to match performance records to this selection process. I am also making changes in the suckler herd in the breeding policy, switching from a criss-cross Simmental x Limousin breeding mix to incorporating more Simmental genetics with a focus on increasing the milk yield of cows.

This is a quick summary of my system and hopefully any other further questions you have can be discussed today.

Optimising reproductive efficiency in the suckler herd

Mervyn Parr[1], Michael Diskin[2], Federico Randi[1,3] Francis Lively[4] Damien Barrett[5] and David Kenny[1]

Animal and Bioscience Research Department, Teagasc, Animal & Grassland Research and Innovation Centre, [1]Grange, Dunsany, Co. Meath; [2]Athenry, Co. Galway. [3]School of Agriculture and Food Science, University College Dublin, Belfied, Dublin 4. [4]Agri- Food and Biosciences Institute, Large Park, Hillsborough, Co. Down. [5] Department of Agriculture, Food and Marine, Co. Sligo.

Summary

- A large Department of Agriculture, Food and the Marine- (DAFM) funded all-Ireland beef cow fertility research programme, led by Teagasc, is currently examining a range of factors affecting the fertility of beef heifers and cows.
- The influence of reproductively important pathogens and trace minerals on reproductive performance of beef cows is not fully known.
- Oestrous synchronisation and fixed time AI can be used as a management tool to reduce calving interval and increase AI usage.
- Only 23% of beef calves are born to an AI sire in 2015
- Maximize heat detection rates by visually observing the herd on a frequent basis, with particular emphasis on early morning and late evening observations combined with a further observation during the middle of the day
- Use heat detection aids as much as possible to find cows in heat.

Introduction

Improving reproductive efficiency will be one of the key factors in achieving the productive and economic targets set out for the beef industry in Food Wise 2025. The target calving interval for the Irish suckler herd is 365 days. However the average calving interval for the suckler herd in 2015 was 407 days, with only 8 in every 10 beef cows having a calf per year (Irish Cattle Breeding Federation; ICBF). There are many potential reasons for poor fertility in beef cow herds, although the relative importance and potential impact of the various contributory factors has not been quantified. The objectives of this paper are to discuss: (i) initial findings from a large on-farm study which is examining the potential role(s) that pathogens and trace minerals are having on reproductive performance in beef cows; (ii) initial findings from a large on-farm study which is examining three synchronisation/fixed-time artificial insemination (FTAI) procedures in beef cows; and (iii) practical recommendations for breeding management and the use of AI in beef cows.

Reproductively important pathogens

Numerous bacterial, viral and protozoan pathogens have been associated with poor fertility and abortion in cattle. Leptospirosis (hardjo-bovis and -prajitno genotypes), bovine viral-diarrhoea (caused by bovine viral-diarrhoea virus; BVDV), infectious bovine rhinotracheitis (IBR) (caused by bovine herpesvirus-1) and neosporosis (caused by Neospora caninum) are all transmissible diseases that are considered to be of economic importance in the international trade of animals and animal products. Each of these pathogens can lead to clinical disease that can have both direct and indirect effects on productive (Tiwari et al., 2007) and reproductive (Van Leeuwen et al., 2010) efficiency.

Bovine viral-diarrhoea virus (BVDV) is a pestivirus which is endemic in the cattle population and is responsible for a wide range of clinical syndromes, amongst which the deleterious effects of the virus on immune function and reproductive performance. A study commissioned by Animal Health Ireland estimated BVD to cost the Irish suckler industry between €32 and €41 per cow per year (Stott et al., 2011).

Infectious bovine rhinotracheitis (caused by bovine herpesvirus-1; BHV-1) is primarily associated with clinical syndromes such as rhinotracheitis, pustular vulvovaginitis and balanoposthitis, abortion, infertility, conjunctivitis and encephalitis in cattle (Straub, 1991; Nandi et al., 2009). Following infection, the virus can lie dormant until such a time it becomes reactivated following immunosuppression (Givens and Marley, 2008). Therefore, these animals serve as a source of infection for unexposed cattle. Once infected, cattle remain as carriers of the virus for their lifetime. Given the low vaccine usage is low (1.8%) in breeding animals, it is apparent that significant future challenges exist in Ireland regarding IBR with herd size increasing and no national control or eradication programme in place (Cowley et al., 2011).

Leptospirosis is a bacterial disease that in animals is characterised by reproductive failure, such as abortions, stillbirths and birth of weak offspring. In cattle, hardjo-bovis and -prajitno genotypes (i.e. sub-serovars) are responsible for host-adapted persistent infections, whereas other serovars cause sporadic infections. These host-adapted serovars cause insidious reproductive losses throughout gestation (abortion rates of 3–10%), yet are much more economically important than are incidental serovars. A number of studies have reported reduced conception rate in seropositive dairy cows (Dhaliwal et al., 1996; Guitian et al., 1999). However, there is a dearth of data on the effect of leptospirosis on the fertility of beef cows. Leptospirosis poses a significant health and safety risk as infected cattle serve as a source of zoonotic infections for humans, since cattle shed organisms in urine.

Neospora caninum (NC) is a coccidian parasite and is major cause of reproductive failure in cattle in many countries (Dubey, 2003; Almeria et al., 2012). Canids (i.e. dogs and foxes) are the definitive host of the parisite. However, NC is not spread horizontally cow-to-cow. Congenital infection, i.e. transmission of parasites from a cow to her foetus during pregnancy, is considered the dominating route of infection. Abortions due to Neospora caninum typically occur throughout gestation. Cattle infected with the parasite are two to seven times more likely to abort compared with unexposed cattle (Romero et al., 2005; Van Leeuwen et al., 2010). NC-associated abortions can occur as sporadic, endemic or epidemic-abortions (Dubey, 2003). Other possible effects of bovine neosporosis include increased culling, reproductive failure, reduced milk production and reduced value of breeding stock (Dubey et al., 2007).

Trace minerals

Trace minerals (copper, iodine and selenium) are essential to support normal growth, reproduction and lactation in cattle (Olson, 2007). Deficiencies of trace minerals have been implicated as a cause of poor reproductive performance in cattle (Wilde, 2006; Olson, 2007) and in particular, anecdotally, in beef cow herds in Ireland. However, there is a lack of scientific evidence to substantiate this. Frequently, producers in Ireland and elsewhere undertake expensive supplementation strategies often with little evidence of a benefit to herd health, productive or reproductive performance (Olson, 2007).

On-farm research -Teagasc

A large Department of Agriculture, Food and the Marine- (DAFM) funded all-Ireland beef cow fertility research programme, involving University College Dublin, ICBF, AFBINI and the Irish Farmers Journal, and led by Teagasc, is currently examining a range of factors affecting the fertility of beef heifers and cows. This work includes two large on-farm trials which were run over two years (2014 and 2015).

Trial 1

Epidemiology

In the months of May through August of 2014 and 2015, a total of 5,554 cows from 155 spring calving suckler cow herds across the Island of Ireland were blood sampled to measure the sero-prevalence of pathogens (leptospirosis, bovine viral-diarrhoea; (BVDV), infectious bovine rhinotracheitis (IBR) and neosporosis) and blood concentrations of trace elements (copper, iodine and selenium). Preliminary finding from the study indicate a sero prevalence of 71%, 78%, 44% and 5% for leptospirosis, BVDV, IBR and neosporosis in non-vaccinating beef cow herds.

Early indications show that blood concentrations of both iodine (30.37μg/L) and selenium (0.52μM) were, on average, below the acceptable range across the country, while average concentrations of copper were about mid-range (11.91μM). Similar to the situation with pathogen exposure, there was considerable variation between herds. Final results of this experiment, including the association, if any, between cow fertility and the aforementioned pathogens and trace elements, will be available later in 2016.

Oestrous synchronisation for beef cows

Measures to control the oestrous cycle, or synchronised breeding regimens have been commercially available for more than 25 years. In recent years a number of alterations have been made to previously used regimens and some new protocols have been developed. The following section will give a brief overview of recently developed regimens for use in beef cows and replacement heifers.

Practical requirements of a synchronisation regimen

- High proportion of cows must ovulate in a timely manner to allow fixed-time AI
- Be capable of inducing heat in cows that are anoestrus
- Require a maximum of three assemblies
- Be cost effective
- Be capable of inducing normal fertility

As an alternative to heat detection and inseminating only cows observed in heat, GnRH could be administered at 72 hours after PRID or CIDR removal with all cows inseminated once at this time (72 hours). The overall proportion of treated cows becoming pregnant would expected to be slightly greater following a fixed-time AI as opposed to inseminating at observed heats only. While this option eliminates the need for heat detection the extra dose of GnRH would cost €5-6 per cow as well as an extra handling of cows. One management option might be to synchronise all cows and breed once by AI to high genetic merit maternal sires followed by the use of natural service to pick up repeats. This should provide sufficient high genetic merit replacements females and, for large herds, reduce the bull power required.

Success rates with synchronisation treatments

The expected conception rates vary from 30- 75% with an average of 50-55% of cows becoming pregnant. Cows that fail to become pregnant to the synchronized breeding, that repeat and are re-inseminated usually have normal fertility (65-75% conception rate) at the repeat heat. It is best that:

- Cows are in a moderate BCS score (2.5 –3.0) at time of treatment. It is equally important that cows are a minimum of 35 days calved at time of PRID or CIDR insertion and are on a good plane of nutrition (plentiful supply of grass) for a minimum of 3-4 weeks prior to, during and after treatment.
- Synchronization should only be used in herds where the levels of management and in particular heat detection skills are high in order to detect heats and particularly repeat heats. Alternatively, a bull should be turned out with cows following the synchronized AI.

- It is vitally important that high fertility semen is used and the competence of the inseminator is high. Semen must be thawed carefully (15 seconds in water at $35^{O}C$) and inseminated into the cow within 1-2 minutes of thawing. The correct site for semen deposition is in the common body of the uterus. Each straw should be thawed separately.

The advantages and disadvantages of heat synchronization in beef cows are summarised in Table 1.

Trial 2

Synchronisation and fixed-time AI

A series of large scale on-farm synchronisation studies for FTAI were conducted by Teagasc in 2014 and 2015 and involved 74 beef cow herds all over the island of Ireland. The trials were run in both autumn and spring calving herds with cows (n=2205) calved ≥35days enrolled in the studies. Three different synchronization protocols were compared, which included the protocol outlined in Table 2 and as well as two minor variations of this. All cows were subjected to FTAI, 72 hrs after PRID removal. Overall average herd pregnancy rates ranged from 50-70% in these trials.

Use of artificial insemination (AI) in sukler herds

In 2015, only about 23% of calves in beef herds were registered to an AI sire. Such low usage of this well tested and effective technology most likely reflects the difficulty and labour requirements for heat detection, assembly of cow(s) for insemination as well as land fragmentation in beef herds. Despite this, it is well acknowledged that AI allows access to genetically proven sires for terminal, maternal and ease of calving traits thus facilitating greater genetic progress and ease of management. Additionally, semen, used in AI, is consistently monitored for fertility and is generally of very high quality and collected from bulls tested clear of transmissible diseases. With natural service bulls, although the reported incidence of sterility is generally low (<4%), subfertility, at a consistent level of 20-25%, is much more common issue.

Table 1. Advantages and disadvantages of heat synchronisation in beef cows

Advantages	Disadvantages
1. Can be used to facilitate AI and the use of genetically superior bulls or to introduce bulls with high breeding values for maternal traits to produce replacement heifers	1. Costs around €25-35 per cow treated + veterinary call out fees and AI costs.
2. With fixed time AI most cows can be bred on an appointed day. There may be savings on insemination fees as a result.	2. Repeated collecting and handling of cows
3. For larger herds the requirement for a number of natural service bulls is reduced	3. Achieving good conception rates requires good management and attention to detail
4. Can be used to induce heat in anoestrous cows. While the conception rate achieved at the induced heat in such cows is generally low (30-50%), fertility at subsequent repeat heats is normal (55-70%)	4. Does not eliminate the need for heat detection. Cows returning to service must be detected in heat and re-inseminated. Alternatively, a bull can be used to breed cows returning to service.

Furthermore, use of AI avoids the necessity to maintain a bull(s) on the farm, which is always a potential hazard. Indeed, data from the Central Statistics Office shows that there were 26 fatalities on Irish farms (13% of total farm fatalities) due to livestock between 2005 and 2014, of which 7 people died as a result of being attacked by a bull.

Breeding Policy

Unlike dairy farmers, many beef farmers have no defined policy for producing quality female replacements, with the result that many beef cow herds have become almost pure-bred with a consequent loss of hybrid vigour. This can lead to a decline in cow fertility and calf vitality and survival as well as a decline in cow milk production and calf performance.

Table 2. Recommended synchronisation regimen for beef cows 35 – 70 days (or longer) calved at time of treatment

Day	Action
Day 0, am (Monday)	PRID or CIDR insertion + GnRH at insertion
Day 7, am, (Monday)	PRID or CIDR removal + prostaglandin + 400 iu eCG i.m. at time of removal (Ideally tail paint cows or affix heat detection patches to cows)
Day 8 (Tuesday)	Cows will start to show standing heats late pm and through the night. Record cows in heat and active
Day 9 (Wednesday)	Most heats expected. Inseminate all cows observed in heat in the evening of Day 9 and on Day10. Heat check cows and record all cows active or in heat (if required). Alternatively, inseminate all cows at 72 hours following progesterone insert removal and administer GnRH to cows not yet observed in heat.
Day 10 (Thursday)	Continue heat detection and inseminate cows observed in heat. Alternatively, inseminate all cows not observed in heat at 72 hours post CIDR or PRID removal and administer GnRH (optional) to these cows at time of insemination.

Notes

- All drugs are Prescription Only Medicines (POMs) and are under veterinary control.
- Dosage of drugs: will vary according to drug and drug formulation.
- Inadvertent administration of prostaglandin to a cow/heifer during the first 3-4 months of pregnancy will cause abortion.

The importance of quality replacement heifers in beef herds is becoming increasingly recognised. One of the primary objectives of the recently introduced Beef Data Genomics Programme (BDGP) is to improve the genetic merit of the national beef herd, particularly for maternal traits. It is envisaged that AI will be increasingly used to produce higher genetic merit (4 and 5 star) female replacements. The successful use of AI is primarily dependent on the accuracy of heat detection.

Breeding and the establishment of pregnancy

Once oestrous cycles have commenced it is the combined effect of heat detection efficiency (submission rate) and conception rate that determines and compactness of calving and ultimately the pregnancy rates after a short defined breeding period (see Table 3). In summary, the better the heat detection rate and the prevailing herd fertility, the more cows that will be pregnant at the end of the breeding season.

Oestrous behaviour

Currently, detection of standing oestrus (heat) is the best indicator of ovulation (release of an egg from the ovary) in cattle and is the best predictor of when to inseminate an animal. In cattle the duration of the oestrous cycle normally varies from 18-24 days with some evidence of the cycle being, on average, 1 day shorter in heifers. For heifers it would appear that the duration of standing oestrus varies from 12 to 14 hours (Diskin, 2008). For beef cows, managed under confined conditions, indoors, the average duration of standing oestrus has been reported to be less than 8.5 hours however, there is significant variation around this average value which would appear to be largely dependent on the size of the sexually active group and prevailing underfoot surface conditions. In the absence of a bull or other aids to assist with identification of females in heat, detection requires the cow or heifer to express behavioural oestrus and secondly for the herdsperson to detect it. Both the duration of standing oestrus and intensity of its expression are affected by a range of environmental factors including under foot surface type, size of the sexually active group and the presence of a bull and the more important factors are briefly discussed here.

Housing arrangement

For satisfactory expression of heat, cows must have adequate space to allow cow-to-cow interaction. If the stocking density indoors is too high the expression of the signs of heat are reduced, consequently making detection more difficult. Also, under high stocking density, it is likely that there will be an increase in the erroneous identification of cows in heat. Additionally, cows dislike being mounted while standing on concrete and have a preference for softer underfoot surfaces such as grass, dirt, woodchip or straw bedded yards. Mounting activity is reduced by almost 50% when cows are on concrete as opposed to softer underfoot conditions, while the duration of oestrous activity is reduced by about 25%. Cows distinctly dislike being mounted by herd mates if the floor surface is either slippery or very coarse.

Status of herd mates

The number of beef cows or heifers in heat simultaneously has a major impact on overall heat activity and on the average number of mounts received per cow. The number of mounts received per cow increases with the number of cows that are in heat simultaneously (up to about 3-4 cows in heat). In smaller and even in larger herds, as more cows become pregnant, the likelihood of more than one cow being in heat on any given day is less, thus, making heat detection more difficult as the breeding season progresses. It is suggested that about 10% of the reasons for failure to detect heats are attributable to "cow" problems and 90% to "management" problems. The latter includes too few observations per day for checking for heat activity; too little time spent observing the cows or observing the cows at the wrong times such as at feeding time. A major reason for failure to detect heat is that those involved in heat detection do not adequately understand the signs of heat. To optimise heat detection both the primary and secondary signs, must be clearly understood.

Maximizing heat detection rates

To maximize heat detection rates, it is important to visually observe the herd on a frequent basis with particular emphasis on early morning and late evening observations combined with a further observation during the middle of the day. It is well acknowledged that the longer the period spent with the herd during each observation period the more cows that are detected in oestrus. The widely accepted laborious, repetitive nature of heat detection has focused research efforts on developing technologies to improve detection rates and/or reduce the labour and commitment involved in observation.

Aids to heat detection

Due to the time consuming and monotonous nature of heat detection, it is strongly advised that one or more technologies to aid with identifying cows in heat be adopted for as long as AI is being used. Some of the more common aids with direct application to beef cows are summarised in Table 3.

Table 3. Different oestrous detection aids for use in beef cows / heifers; mechanisms of action, relative cost and usefulness

Aid	Mechanisms of action	Relative cost[1]	Usefulness and Remarks
Teaser bulls	Yearling bulls can rendered sterile by vasectomy, epididyectomy, or incapable of mating by penile deviation. Bulls seek out cows/ heifers in oestrus.	***	Start with yearling bulls. Vasectomy or epididyectomy needs only be performed unilaterally with the other testis castrated. Penis deviation requires more extensive surgical preparation. Teaser bulls are particularly useful when fitted with a chin ball harness. However, they require the same maintenance and safety precautions as an entire bull. Risk of disease spread and variation in libido are drawbacks.
Tail paint or chalk	Water-based paint or chalk is applied to the animal's tailhead. When the animal in heat is mounted by a herd mate the paint of chalk is rubbed off by the friction between the brisket and tailhead.	*	Requires repainting / chalking at 7-10 days intervals which requires animal assembly. Can be removed by cows rubbing against low hanging branches etc. Works well early in the season when oestrous activity is high. Best to remove any loose hair or dirt from tail head prior to application
Heat mount detectors	The detector is a pressure sensitive device with a built-in timing mechanism. It is glued onto the tail head, pressure from the brisket of a mounting animal requires approximately 3 seconds to turn the detector from white to red. This timing mechanism helps distinguish between true standing heat versus false mounting activity.	*	False activation particularly in cows indoors or by rubbing against branches / trees giving rise to false heats. Can be lost when cows are moulting. Best to remove any loose hair or dirt from tail heat prior to application. Duration of use probably 3-4 weeks before replacement is required.
"Scratch card–type" mount detectors	These scratch card type patches either with (self-adhesive) or spray glue are glued onto the cow's tail head. The surface coating is removed by the friction of the brisket of the mounting animal revealing an underlying shiny bright surface.	*	Similar to ink based detectors above in that false activation particularly in cows indoors or by rubbing against branches / trees giving rise to false heats. Can be lost when cows are moulting. Best to remove any loose hair or dirt from tail heat prior to application. Duration of use - 3-4 weeks. Must be warmed before application

[1]More stars indicate higher cost

Timing of insemination

For beef cows the average interval from the onset of heat to ovulation is, on average about 31 hours and somewhat shorter for beef heifers (~27.4 hours). However, all studies that have measures this report significant variation between animals around these average values. In practice, the exact time of heat onset is rarely known and combined with the known inter-animal variation in timing of ovulation it is not practical to recommend an exact timing for insemination. Consequently, the well-established and recommended 'am-pm' rule still stands; in other words animals seen on heat for the first time in the morning should be inseminated that evening and those seen in the evening, submitted for AI the following morning.

Summary

Improving reproductive efficiency is pivotal to increasing productivity and profitability on Irish suckler herds. Monitoring herd health and increasing the usage of reproductive management tools such as AI are just two of the many factors to achieve this goal. It is strongly recommended that beef farmers should develop a specific breeding programme to produce quality herd replacements. This will become especially important to fulfil the requirements of the Beef Data and Genomics Programme. Heat detection is critical to the success of AI; however it can prove to be both very time and labour consuming. For beef cows, progesterone-based synchronisation combined with fixed time AI may be worth considering. Final results of both aforementioned Teagasc led beef cow fertility experiments will be available later in 2016.

References

Almería, S., Serrano, B., Yàniz, J.L., Darwich, L. and López-Gatius, F. 2012. Cytokine gene expression profiles in peripheral blood mononuclear cells from Neospora caninum naturally infected dams throughout gestation. Veterinary Parasitology. 183: 237-43.

Cowley, D.J.B., Clegg, T., Doherty, M. and More, S. 2011. Aspects of bovine herpesvirus-1 infection in dairy and beef herds in the Republic of Ireland. Acta Veterinaria Scandinavica 53: 40-49.

Dhaliwal, G.S., Murray, R.D., Dobson, H., Montgomery, J. and Ellis, W.A. 1997. Reduced conception rates in dairy cattle associated with serological evidence of Leptospira interrogans serovar hardjo infection. Veterinary Record 139: 110-114.

Dubey, J.P. 2003. Review of Neospora caninum and neosporosis in animals. Korean Journal of Parasitology 41: 1-16.

Dubey, J.P., Schares, G. and Ortega-Mora, L.M. 2007. Review: Epidemiology and control of neosporosis and Neospora caninum. Clinical Microbiological Reviews: 20, 323-367.

Givens, M.D. and Marley, M.S.D. 2008. Infectious causes of embryonic and fetal mortality. Theriogenology 66: 648–654.

Guitian, J., Thurmond, M.C. and Hietala, S.K. 1999. Infertility and abortion among first-lactation dairy cows seropositive or seronegative for Leptospira interrogans serovar hardjo. Journal of the American Veterinary Medicine Association 215: 515-518.

Nandi, S., Kumar, M., Manohar, M. and Chauhan, R.S. 2009. Bovine herpes virus infections in cattle. Animal Health Research Reviews. 10: 85-98.

Olson, K.C. 2007. Management of Mineral Supplementation Programs for Cow-Calf Operations. Veterinary Clinics of North America, Food Animal Practice. 23: 69-90.

Romero, J.J., Breda, S.V., Vargas, B., Dolz, G. and Frankena, K. 2005. Effect of neosporosis on productive and reproductive performance of dairy cattle in Costa Rica. Theriogenology 64: 1928–1939.

Stott, A.W. 2012. Costs and Benefits of Preventing Animal Diseases, A review focusing on endemic diseases.

Straub, O. 1991. BHV1 infections, relevance and spread in Europe. Comparative Immunology, Microbiology and Infectious Diseases. 14: 175-186.

Tiwari, A., Van Leeuwen, J.A., Dohoo, I.R., Stryhn, H., Keefe, G.P. and Haddad, J.P. 2005. Effects of seropositivity for bovine leukemia virus, bovine viral diarrhoea virus, Mycobacterium avium subspecies paratuberculosis and Neospora caninum on culling in dairy cattle in four Canadian provinces. Veterinary Microbiology 109: 147–158.

Van Leeuwen, J.A., Haddad, J.P. Dohoo, I.R., Keefe, G.P., Tiwari, A. and Tremblay, R. 2010. Associations between reproductive performance and seropositivity for bovine leukemia virus, bovine viraldiarrhea virus, Mycobacterium avium subspecies paratuberculosis, and Neospora caninum in Canadian dairy cows. Preventive Veterinary Medicine: 94, 54-64.

Wilde, D. 2006. Influence of macro and micro minerals in the peri-parturient period on fertility in dairy cattle. Animal Reproduction Science. 96: 240-249.

Cashflow Budgeting – a step in achieving your goals

Peter Young,

Farm Finance Specialist, Irish Farmers Journal

What amount of money do you need to make off the farm this year?

That's one of the first and most important questions for farmers. After all it is one of the main reasons they are farming. The amount of money people need can be hugely different. With some of the farmers it could be as low as zero when there are other sources of income coming in to the household. Where the farm is the only source of income it could be over €60,000 before tax or even more depending on borrowing and size and stage of the family. Having this as a clear goal makes it easier to focus on what the farm has to achieve. It is also the first step in realising that cashflow budgeting is just a tool to achieving your goals.

Over the last few years I have focused on getting farmers to improve their cashflow budgeting skills. It does not come naturally. I often think that the reason the uptake is not higher is that farmer's focus on the job rather than the outcome that is can help them achieve.

Learning the basics

At its most basic cashflow budgeting is looking at what you have in your account at the start of the month. You then look at what will potential come in from sales or direct payments (cash in). You then look at what payments you make (cash out). By doing that you can try to identify what will be in the account at the end of the month. I bet if I asked farmers to do that they would not be too far off. Doing a forward budget is just an extension of that. Farmers know more about their business that they let on.

Pick your tool

Cashflow can be done on a piece of paper of a simple Excel spreadsheet. There are plenty of computer programmes such as the Teagasc cashflow planner.

Avoid the excuses

The main excuse I hear is you can't budget due to the volatility of prices or the weather. How do you know what will come in or go out I often hear. Yet when I sit down with farmer to go through the process they can quickly come to a price they expect. Yes it can rise or fall but they will not be far off. Volatility is the reason you have to budget. Once you have a budget you can change the milk price to see the impact or drop the beef or lamb price to find out the gap it would leave in your current account. The biggest issue for some farmers last year was when they got paid their direct payments. While the majority did get paid on time many were left in a difficult position. Doing a forward cashflow will not avoid these hold up but they will quickly show the gap that not getting them when expected leaves.

The other excuse is how do I know what I will be spending? Every time I sit down with a farmer and ask them what fertiliser or meal they have a good idea. They can quickly build up the picture and the potential for the farm.

Managing cashflow

Farmers have more control in the short term that they think. Many use merchant credit to avoid going over their overdraft, expensive as it may be! They can also sell stock earlier to bring in cash when needed. However alright in the short term it will not address underlying issues if the farm is not bringing in more than is needed over the longer term.

Avoid surprises

Doing a cashflow budget has one focus for most – how low will they go in their current account. It is about the picture of money coming in and out each month and what is left in the current account. Most farmers will use their overdraft during the year or take out a stocking loan. By doing a cashflow shows how much of an overdraft you need or if you need to approach the bank early to get an increase.

Banks love them

The first thing a bank will ask for now is a cashflow. Most will not really understand or care about all the detail. They want evidence that you have through about what your business needs and what you are coming in for.

No two are the same

Cashflow is a very individual thing and no two farmers will be the same. We all start off with a different buffer or overdraft and have different debts and living expenses to come from the farm. That is why is critical to do your own cash flow for the months ahead. The real question we have to answer is not if your cashflow is under pressure but when your cash flow will come under the most pressure in the months ahead?

Looking forward instead of backwards

Most farmers only use their accounts to look backwards. Think about it. By the time you get your finalised accounts from your accountant they are historic. They tell you what has happened in the past. Most businesses use monthly management accounts to keep a handle on their business. By filling in your actual month cashflow gives you that information. However the real key is to using accounts is to to look forward – the key here is to set out a forward budget. That is what cashflow budgeting is all about.

This we I started the cashflow challenge in the Business sense pages of the Irish Famers Journal. Of the six farmers there were two beef/sheep farmers.

1. A drystock farmer who rears calf to 2 year old stores and also buys weanling heifers to beef. He owns 120 acres and rents 50 acres. His goal is to improve his planning and finances. He wants to have a set plan for the farm and stick to it. He works off farm so does not need to take living expenses from the farm.
2. A mixed sheep and beef farmer. He has 25 suckler cows and 150 ewes on 100 acres. His goals for the year are to remain being full time farmers and ensure that the farm makes €20,000 to contribute to the household. Small suckler farmer

I will focus on the sheep and beef farmer. His name is Eoin and most of his income comes at the back end of the year. He matches a lot of expenses to be paid at that time as well. He ended up with a €10,931 in his bank account at the end of last year. This is actually better than the previous year when it was slight negative at -€567.

2016 Cashflow challenge

Eoin has built up numbers since he took over. He currently runs 25 suckler cows and 100 ewes. He currently finished all progeny to beef. He wants to change this and sell the bulls as weanlings. With the drop in stocking rate he also wants to boost ewe numbers by 50% to 150 in 2016.

For Eoin he sees more potential in hitting his profit target by doing this. He hopes he can increase output per hectare while at the same time reducing costs. Just like the other farmers in Cashflow Challenge we went through each month to see when sales were made and money can in and also went out.

Figure 1

Breakdown of money in for Eoin

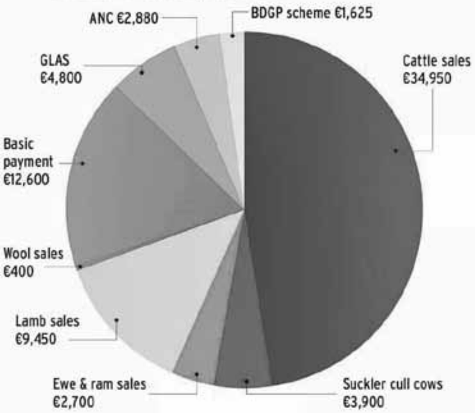


Figure one shows a pie chart of the money coming into the farm in 2016. €51,400 or over 70% of the €73,000 income that comes into the farm is from the sales from beef and lambs. The remaining 30% or €22,000 comes in the form of direct payments from the basic payment scheme, GLAS and the BDGP.

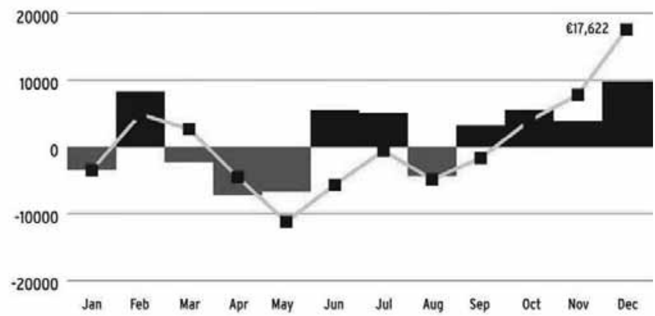
Figure 2 gives the money that flows out of the farm account. Feed, fertiliser and contractor as always are the big three for Eoin, the ones that he will aim to tackle over the coming year. While there is €34,000 in direct farm costs there is €56,683 in total to come out of the account. It means that Eoin will spend 77% of the money that comes into the farm account. It gives his 23% to hold onto or €17,000. You might say that a bit short of the €20,000 target but we have taken out €9,360 for drawing already. So he is on target to get €26,000 out for the household.

The current account

More importantly a cashflow shows how the current account is expected to go over the year. As shown in Figure 3 Eoin's current account is in the black in February but dips back into overdraft in March. It does not get out of the red until October when the year is nearly finished. Eoin has tended to pay for inputs for the farm when he buys them avoiding costly merchant credit. Eoin has an overdraft of €7,000 for the farm. As you can see this is clearly breached in May when it jumps to over €11,000. The monthly cashflow picture for Eoin is typical for a beef and sheep farmer showing big fluctuations each month. Over the year, seven months have more money coming into the account that going out. For five month there is more going out.

Figure 3: The Cashflow Challenge

Monthly budget for Eoin for 2016 and how his current account will look over the year



This is a simple picture that everyone should paint for their farm by doing a cash flow. It quickly shows if you are balancing money coming in with money going out. For Eoin February is the only month that he has more coming in early in the year. As you move towards the end of the year the picture looks better.

Having different bank accounts

One of the most important points to control your finances is to have a separate bank account for the farm and the house. You should have a farm account where all the money coming in and out go through. There should also be a second account. This is where money is paid form the farm where needed for living expenses.

In brief

- Set the goals for your farm
- Use cashflow planning as a tool to achieve them
- Look forward instead of backwards
- Follow Eoin and the other farmers and sign up to the Cashflow Challenge on www.farmersjournal.ie

An overview of my suckler beef and sheep farming system

Glasnant Morgan

Pwllrhwyaid, Talybont-on-Usk, Brecon, Wales

I am farming 800 ewes and 50 Suckler cows on both low land and hill ground. We have 3 sons in the family, the eldest of which farms at home with me. He also has a young family. His son is eight and he can`t be kept off the farm. I have previously won the Grassland Management award from the British Grassland Society in 2005 and currently judge the competition each year.

Grassland management

Our sole aim is to produce offspring so we graze the grass hard, that's the only way to keep on top of it. Grazed grass is integral to the farming system. The aim is to get the most from pasture to maximise self-sufficiency. In the spring 10% of the farm has grass seed stitched in with a grass harrow and hopper. We are in an environmental scheme and have crop rotation policy of swedes, wholecrop and grass. The grass is usually stitched in and we use the best leys available with specialist clover in the mix.

Beef and sheep systems

The farm business encompasses 450 acres of land, some of which rises to 400 metres. The annual rainfall is 1800 mm. There is a herd of 50 sucklers which calve in the autumn and spring and the offspring are sold as forward stores. The herd is used to manage grazing areas, particularly the open hill land. Our beef system is to sell our cattle as forward stores in September each year. We usually keep one group of sucklers on the lowland and one on the hills. We have a sheep flock of 850 ewes and have been selling lambs to Waitrose since 2001. The best Texel, Charollais and Suffolk-cross lambs from the farm's 250 Talybont-on-Usk type Welsh Mountain ewes are selected for breeding.

Mentoring young farmers

I am involved in a mentoring programme in Wales called the Young Entrants Support Scheme - it entitles young famers under 40 to 4 days free mentoring. It involves us calling to the entrant`s farm and looking at the accounts and making a business plan for the farm in question. They also come to visit our farms and see how they are run.

This is very good because it keeps us on our toes as well. We have to do some homework on developing the farms and making sure they are run as efficiently as possible. Fertiliser and lime are usually the two keys costs which are analysed and are also the key behind good grassland management. I recently acted as the National Farmers Union, Wales Brecon County Chairmen for two years to add to my workload!

Notes

Notes


Lunch Ticket

Lunch Ticket

Irish Grassland Association

Follow us on

Irish Grassland Association IGA

@IrishGrassland

Design & Print by Modern Printers: 056 7721739