

An Roinn Talmhaíochta,
Bia agus Mara
Department of Agriculture,
Food and the Marine

Grassland Farmer of the Year: Heavy Land Winner

Farm Open day at Bermingham's Farm, Doonbeg, Co. Clare

Tuesday 16th April 2019



Grass10 Campaign: The Role of Grazed Grass

Grazed grass is the cheapest and most widespread feed for ruminant production systems in Ireland. Grass enables low-cost animal production and promotes a sustainable, green, and high quality image of milk production across the world. Recent industry reports (Food Harvest 2020 and Food Wise 2025) have highlighted the important role grass can play in an expanding milk production industry. Through a combination of climate and soil type, Ireland possesses the ability to grow large quantities of high quality grass and convert it through the grazing animals into high quality grass based milk and meat products.

Our competitive advantage in milk production can be explained by the relative cost of grass, silage and concentrate feeds. Therefore, increased focus on grass production and efficient utilisation of that grass should be the main driver for expansion of the livestock sector. An analysis of farms completing both grassland measurement in PastureBase Ireland and a Profit Monitor demonstrated increased profit of €173/ha for every 1 tonne DM/ha increase in grass utilised. It should be noted that issues such as environmental sustainability (carbon footprint, nutrient use efficiency, etc.) are also improved by increased grass utilisation.

Future growth in the pasture based milk production in Ireland will depend on an effective grass-based system. However, Irish farmers are not using grass to best effect and there is thus a need to (1) increase grass production and (2) ensure efficient utilisation of that grass.



Introduction and welcome to Bermingham farm

Background

Danny Bermingham farms with his wife Yvonne near the West Clare village of Doonbeg.

They have three children. Danny inherited the farm from his late father. Over the years, a lot of land improvement, through drainage and re-seeding, has been completed and a considerable investment made in farm building infrastructure also.

The farm has a mixture of peat soil & clay soils with poor drainage and is in an area of high rainfall (1250mm/annum).

The current farm operation is totally devoted to dairying and has expanded gradually from 20 cows initially to 81 cows in 2011 and milking 104 cows in 2018.

The farm has been a monitor farm under the Kerry Agribusiness joint programme "Focus on Profit" since 2011 as part of the Heavy soils programme.

2018-Key physical metrics

Area Farmed: 61 ha (incl 17.4 ha leased outblock)

Milking Block Area : 43.6 ha

Farm Stocking Rate-2.17 U/ha

Milking Block Stocking Rate-2.39 Lu/Ha

Cows Milked-104

Milk Solids/Cow 2018-528kgs

Total Milk Solids Produced 2018 -54912Kgs

Milk Solids/Milking Block Hectare 2018-1262kgs

SCC-140,000

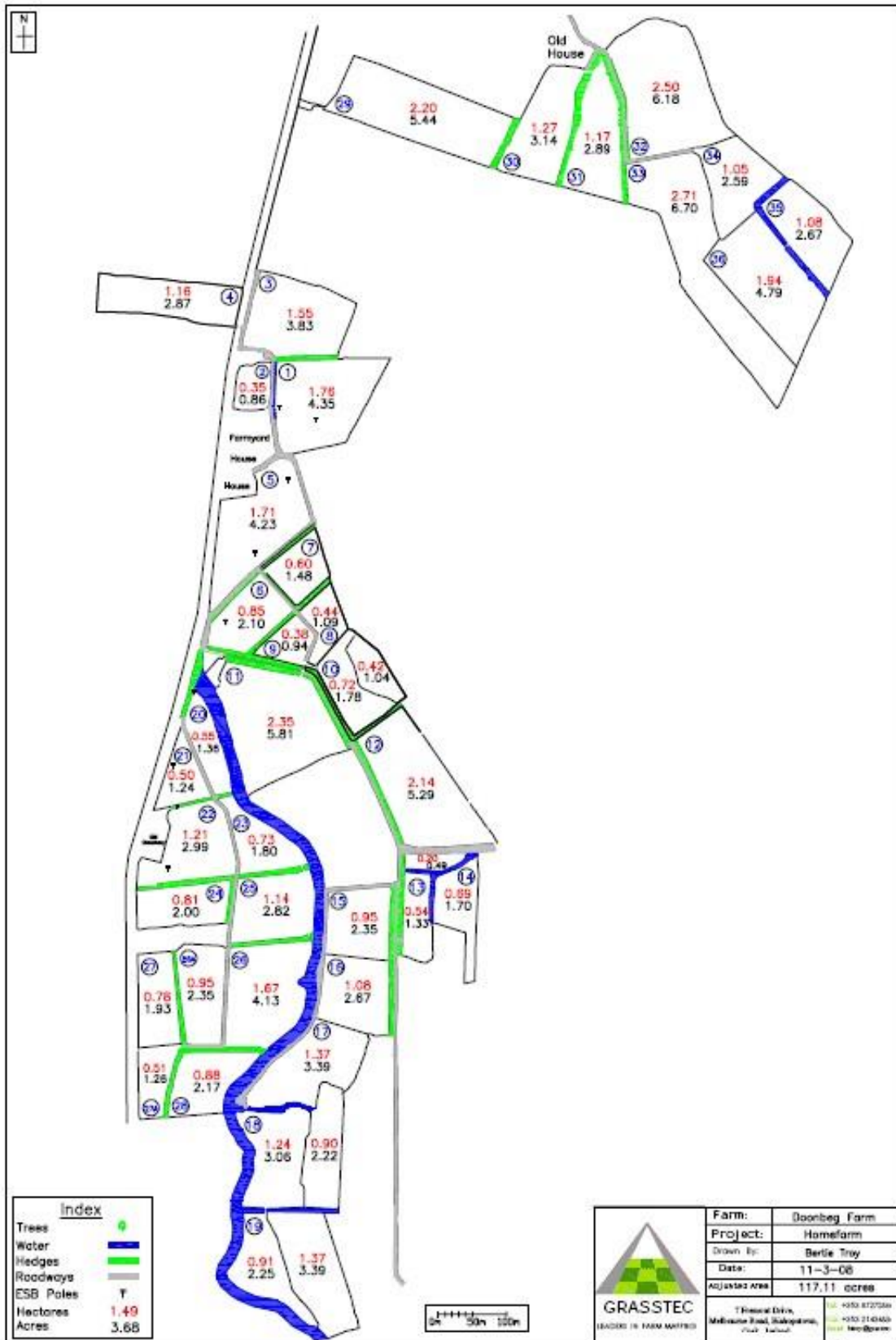
6 week calving rate-84% {Calving start date February 6th}

Calving Interval (Days)-370

% Heifers calving 22-26 months-100%

Herd EBI-€153

The milking platform is in a long narrow strip along the main road .The farm is split by the Doonbeg river.



The outside block is used for grazing the replacements and for silage production.

Milk is supplied to Kerry Agribusiness.

The Key farm drivers:

- Profit €€€
- Optimize grass in diet – reduce costs
- Herd Genetics – High EBI (Milk Solids & Fertility)
- Good grazing infrastructure – extend grazing
- Ongoing drainage & reseedling
- Silage Reserves – reduce weather risk

	Herd	Farm	Milking	EBI	6 week
Year	Size	SR(Lu/ha)	SR(Lu/Ha)	€	calving %
2011	81	1.94	1.9	102	91
2012	87	1.98	2.04	131	73
2013	96	2.01	2.25	159	81
2014	106	2.04	2.48	186	78
2015	101	1.98	2.37	198	88
2016	103	2	2.41	137	86
2017	107	2.25	2.5	141	86
2018	104	2.17	2.39	153	84

Grass Management

Danny began measuring grass in 2008 and has continued to do so ever since.

“We walk the farm weekly and twice a week in times of high growth”. This information is then entered into the PastureBase Ireland web-based programme. Pre-grazing covers and cover per cow are two key figures we use when making decisions. Heavy farmers have, by their nature, to be opportunistic in making decisions relating to taking out surpluses, harvesting silage etc. and be flexible in taking grazing opportunities as they present themselves.

On Danny’s farm annual days at grass can range from 210 to 245 depending on spring/autumn weather conditions. In the 2018 summer growth rates didn’t fall below 40kgs/ha/day!



Grass Grown (tonnes/Ha):

Year	2011	2012	2013	2014	2015	2016	2017	2018
t/Ha	10.2	6.5	9.5	10.7	9.6	12.1	14.5	11.7

A continuing focus on soil fertility has highlighted the challenges in lifting soil fertility indices on heavy soils farms (70% of soil samples returned organic matters greater than 20%). This impacts on the grass growing potential of these farms. Danny is mindful of the need to maintain a good silage reserve e.g. 0.5 t DM/Cow and this together with grass growth potential of the farm determines the optimum stocking rate for his farm. A guide to calculating optimum stocking at moderate supplementation is to divide grass grown by 5.5 eg $12.5 \text{ tonnes} / 5.5 = 2.27 \text{ Lu/Ha}$ (Whole farm).

Discussion Groups-Group Participation

Danny is an active member of his local discussion group. He also attends the monthly Monitor farmer meeting and regularly links up for on farm discussion with the other farmer participants of the Heavy Soils Programme. The support of other group members is crucial in helping to make solid long term decisions that are first explored, challenged and then refined.

Financial Performance & Key costs

The Monitor farmer annual financial meeting in January allows Danny to benchmark his farm data against other development farms with similar soil type and set his financial budgets accordingly.

	2017	2018
Dairy Hectares (incl silage area)	44.7	48.7
Gross Output/Dairy Hectare €	6216	5427
Total Costs/Dairy Hectare €	3972	3761
*Net Profit/Dairy Hectare €	€2,244	€1,666

*excl own labour & direct payments

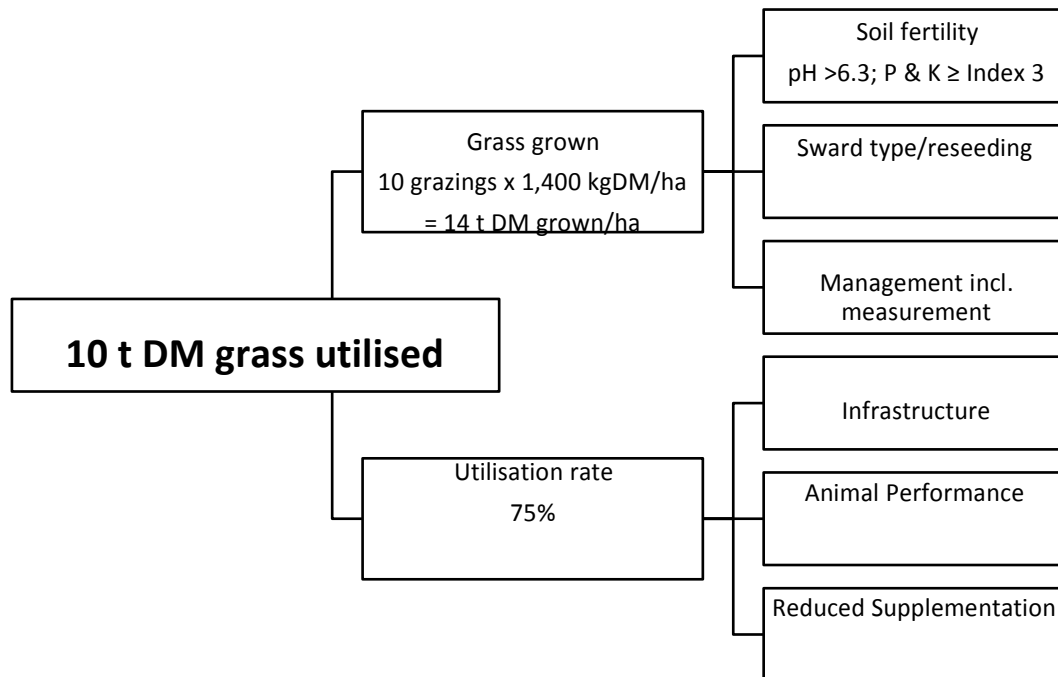
Feed/Fert Costs Dairy Hectare

Feed €	€786	€784
Fertiliser €	€454	€548

Supplementation Use Kgs/cow	1465	1730
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Grass10 Campaign

Grass10 is a new four-year campaign recently launched by Teagasc to promote sustainable grassland excellence. The Grass10 campaign will play an important part in increasing grass growth and utilisation on Irish grassland farms, thereby improving profitability at producer level and helping to ensure the long term sustainability of Irish beef, dairy and sheep production. Significantly, it can provide the platform or framework to enable various industry stakeholders to collaborate for collective action. Given the current performance in terms of grass growth and utilisation, the need for 'collective action' should be clear.



Objective

The objective of the campaign is to achieve **10 grazing's/paddock/year** utilising **10 tonnes** grass DM/ha. In order to achieve this objective, we will need to achieve significant changes in on-farm practices, specifically:

1. Improved grassland management skills
2. Improved soil fertility
3. Improved grazing infrastructure
4. Improved sward composition
5. Increased grass measurement and usage of PastureBase Ireland



Grassland Farmer of the Year Competition

With 2017 designated the Year of Sustainable Grassland, and a proven link between increased grass utilization and increased profitability, the Department of Agriculture, Food & the Marine, in collaboration with numerous industry stakeholders including Teagasc, launched a competition as part of the Grass10 initiative to find the Grassland Farmer of the Year. Teagasc research indicates that grass utilisation can be increased significantly on farm.

With this background Grass10 has launched a grassland competition to recognise those farmers who are achieving high levels of grass utilisation in a sustainable manner. Practises used by these famers to increase grass production and utilisation, include soil fertility management, sward renewal, grassland measurement and improving grazing infrastructure.

The objective of the Grassland Farmer of the Year Competition is to promote grassland excellence for all Irish livestock farmers.

The Bermingham Family: Heavy Land Category winners of the Grassland Farmer of the Year Competition 2018.

Congratulations!!!!



Grassland Management



PastureBase Ireland: Technologies to assist grassland management

Technologies which enable data-informed decision-making on the farm can help to increase farmers' confidence and greatly improve grassland management. Huge leaps have been made in developing decision support tools to improve resource farm efficiency, profitability and sustainability. The primary objective of most of these tools is to increase the information available to assist in farm-management decision making as well as to collect and collate large amounts of data in a centralised database.

Teagasc launched PastureBase Ireland (PBI) – an online grassland management decision support tool – in January 2013 and Grass10 will see the roll-out of the new PastureBase Ireland website as a key component of the campaign. Upon entering data from their own farm (e.g. grass measurements), the platform provides real-time and customised grassland management advice to the farmer to assist their decision-making. These reports are developed in such a way that allows farmers to benchmark their individual farm with farm in their discussion group or in their region. The data accumulated to date indicate that PBI participating farms have achieved improvements in grass DM production and grazing management.

PastureBase Ireland is informing us that farmers need to have a good control of current grass supply in order to manage grass. Grass cannot be managed correctly without knowledge of farm cover, grass demand and grass growth. The crucial point on any farm is utilising the feed resource produced on the farm.

The average number of grass measurements by the finalists was 35 per year. This shows that the farmers are constantly monitoring grass growth and supply which enables them to graze grass at the right cover which in turn allows them to grow more grass as re-growths are faster. The table below outlines the average grazing performance of the Bermingham farm.



Grazing performance of Bermingham farm

Grazing Performance	2017	2018
Grass production (t DM/ha)	14.5	11.7
No. grass measures completed/yr	38	38
No. of grazings/events per Pdk/year	7.5	7.1
Days at grass	279	250

The average number of grazings being achieved was over 7 including the paddocks cut for silage as well as grazing. Maximising the number of grazing's achieved on each paddock is a very effective method of increasing farm grass utilisation. Every extra grazing/paddock achieved increases annual grass DM production by 1.5 t DM/ha PastureBase Ireland enables the farmer to keep track of grass growth per paddock, the number of grazing's per paddock and the quantity of grass being consumed at each grazing. This highlights poor performing paddocks and deficiencies in grazing management.



Farm Performance

The Bermingham family are farming about 60ha of land of which about 25% is leased. Since 2011 the herd size has increased from 80 cows to 100+ cows today. In 2018, a stocking rate of 2.2 LU/ha was carried on the whole farm and with a milking platform stocking rate of 2.4 LU/ha.

This focus of output and profit on this farm is stemmed from high grass utilisation. The farm sold over 525kgs milk solids/cow to Kerry Agribusiness in 2018 or over 1250kgs milk solids/ha from the milking platform.

As with high grass utilisation good herd genetics has also a role to play in the high performance of this farm. The herd EBI of this herd is about €153. The six week calving rate has hovered around 85% over the last few years. Calving starts in early February and turnout to grass is targeted for early March. Compact calving is key to profitability where the Bermingham's can get high numbers of cows to grass early in the spring, which increases the value of milk sales and reduces feed costs. Having very good grazing infrastructure in place is essential to maximise the amount of grass eaten on the farm.



Soil Fertility Management

Good productive soils are the foundation of any successful farming system and key for growing sufficient high quality grass to feed the herd. Therefore, the management of soil fertility levels should be a primary objective of every farm. A recent review of soils tested at Teagasc indicates that the majority of soils in Ireland are below the target levels for pH (i.e. 6.3) or P and K (i.e. Index 3) and will be very responsive to application of lime, P & K. On many farms sub-optimal soil fertility will lead to a drop in output and income if allowed to continue. Teagasc is highlighting 5 steps for effective soil fertility management.

1. Have soil analysis results for the whole farm (soil sampling every 2 years).
2. Apply lime as required to increase soil pH up to target pH for the crop
3. Aim to have soil test P and K in the target Index 3 in all fields
4. Use organic fertilisers as efficiently as possible
5. Make sure the fertilisers used are properly balanced

For those farmers aiming to improve soil fertility on their farms, following these 5 steps provides a solid basis for success.

Phosphorus (P)

The proportion of soils tested with low soil P fertility (i.e. P Index 1 and 2) has increased to approximately 62%. This overall trend reflects the soil P fertility status on many farms, and indicates a serious loss in potential productivity. Recent research has shown that soils with P index 3 will grow approximately 1.5 t dry matter (DM)/ha per year more grass than soils with P Index 1. Most of the DM yield response in these experiments took place in spring and early summer.

Potassium (K)

Soil analysis also shows that the trend in soil K status, across dairy and drystock enterprises, broadly mirrors that for P. Despite no legislative limits on K fertilisers, K usage dropped in line with P fertiliser applications. Consequently soil test results indicate a sharp increase in soils with low K status between. Over half of the soil samples tested by Teagasc had very low to low soil K status (i.e. K Index 1 or 2).

Increasing Soil Nutrient Availability-Lime

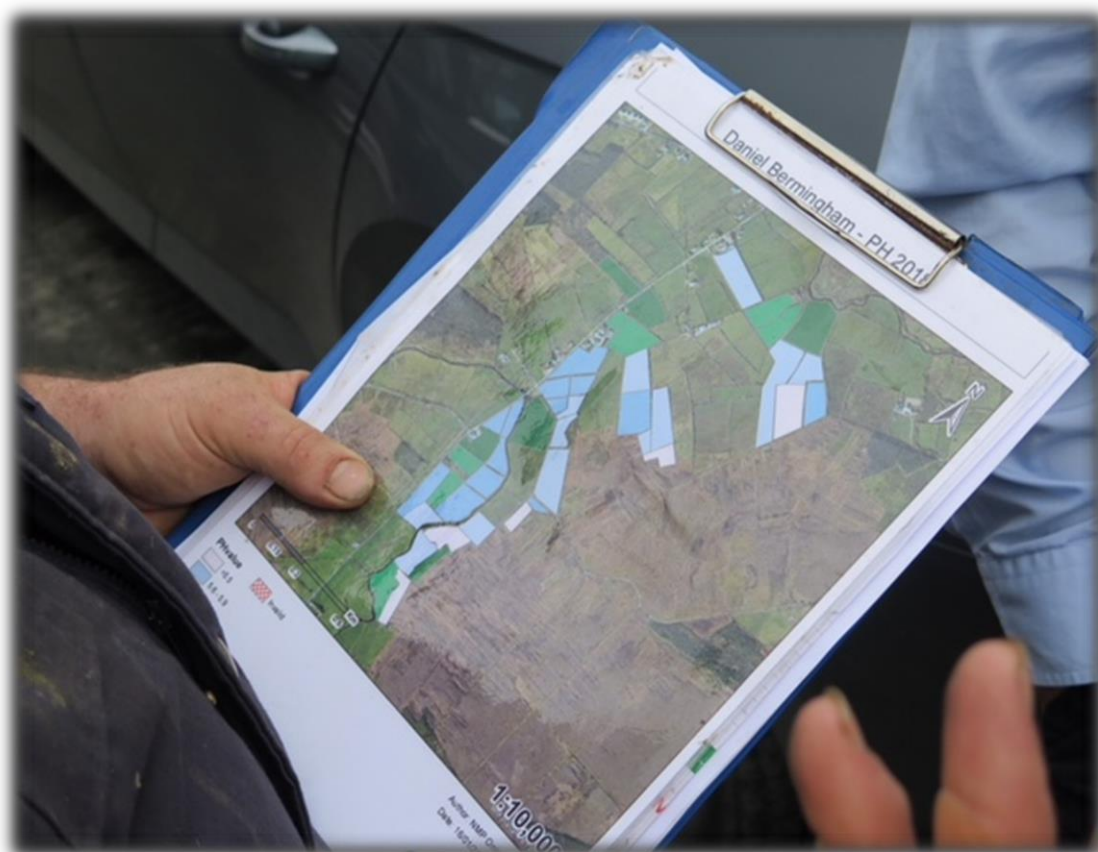
Lime is a soil conditioner and corrects soils acidity by neutralising the acids present and allowing the micro-organisms and earthworms to thrive and break down plant residues, animal manures and organic matter. This helps to release stored soil nutrients such as nitrogen (N) phosphorus (P) potassium (K) sulphur (S) and micro-nutrients for plant uptake. In addition, ryegrass and clover swards will persist

for longer after reseeding where soil pH has been maintained close to the target levels through regular lime applications.

Liming acidic soils to correct soil pH will result in the following:

- Increased grass and crop production annually
- Increase the release of soil N by up to 60 units N/acre/year
- Increase the availability of soil P and K and micronutrients
- Increase the response to freshly applied N, P & K as either manures or fertiliser

Ground limestone is the most cost effective source of lime and can be applied throughout the year when the opportunity arises. Lime is the foundation of soil fertility and is a primary step to take when correcting soil fertility.



Land Drainage

In order to maximise the performance of land drainage systems, it is vital to ensure that the design of the systems is suited to the soil and site conditions presents. It is standard practice to carry-out a site investigation as the first step in the drainage design process. This involves walking the site and noting outfall conditions, field slope, landscape features, areas of poor grass growth, poor underfoot conditions or abundance of rushes/weeds as well as existing drains (in-field and open) and natural water-courses. The next step is digging test pits on the site to be drained. Soil test pits are very dangerous and prone to collapse. You should not enter a soil test pit but instead inspect material as it comes up in the digger bucket. Note the depth and thickness of each visually distinct layer. We need to note layers that are impeding or permitting water movement. The final phase of the site investigation involves measurement and mapping of the site. This allows field levels and size/shape to be noted, potential layouts to be mapped/ reviewed and most importantly outfall conditions to be assessed. In most cases a level survey is required to optimise the location of field drains and ensure adequate falls.

General Considerations

- No drainage work should be carried out before the drainage characteristics of the soil are established by a site and soil test pit investigation.

- Two types of drainage system exist: a groundwater drainage system and a shallow drainage system. The design of the system depends entirely on the drainage characteristics of the soil.

- Distinguishing between the two types of drainage systems essentially comes down to whether or not a permeable layer is present (at a workable depth) that will allow the flow of water with relative ease. If such a layer is evident a piped drain system is likely to be effective, at this depth. If no such layer is found during soil test pit investigations, it will be necessary to improve the drainage capacity of the soil. This involves a disruption technique such as mole drainage, gravel mole drainage or sub-soiling in tandem with field drains.

- Drains are not effective unless they are placed in a permeable soil layer or complimentary measures (mole drainage, sub-soiling etc.) are used to improve soil drainage capacity. If water isn't moving through the soil in one or other of these two ways, the watertable will not be lowered.

- Outfall level must not dictate the drainage system depth. If a permeable layer is present, it must be utilised.

- Drain pipes should always be used for drains longer than 30 m. If these get blocked it is a drainage stone and not a drainage pipe issue.
- Drainage stone should not be filled to the top of the field trench except for very limited conditions (the bottom of an obvious hollow). Otherwise it is an extremely expensive way of collecting little water.
- Most of the stone being used for land drainage today is too big. Clean aggregate in the 10–40 mm (0.4 to 1.5 inch approx.) grading band should be used. Generally you get what you pay for.
- Sub-soiling is not effective unless a shallow impermeable layer is being broken or field drains have been installed prior to the operation. Otherwise it will not have any long-term effect and may do more harm than good.
- Most land drainage systems are poorly maintained. Open drains should be clean and as deep as possible and field drains feeding into them should be regularly rodded or jetted.

Detailed design advice is accessible at the webpage of the Teagasc Heavy Soils programme <https://www.teagasc.ie/crops/grassland/heavy-soils/>



Investing in Grazing

In order for expansion to be successful, there will be a requirement for significant investment on many farms. The available capital for this investment will be a scarce as expansion happens and continues. Therefore, investment on farm should be prioritised at areas that increase efficiency and reduce the exposure of the business to external shocks such as lower price of product or higher price of inputs etc. All investments that give the highest returns should be prioritised.

Every ton of additional grass eaten by the grazing animal will add €180/ha additional profit to a dairy farm. Therefore it is important that investment in grazing is prioritised to give the maximum return. The table below summarises the potential return on investment for different investments in a dairy farm business. Bottom Line: The level of return to these investments is high because it is investing in grazing. These investments will either enable the farm to grow more grass or lengthen the grazing season or both.

Investment	Cost	Impact	Annual Return (%)
Increase soil P & K levels	P & K application of 20 and 50kg/ha	+1.5 t DM/ha/year grass growth	152
Reseed full farm in eight year cycle	€650/ha	+ 1.5t DM/ha/year grass growth	96
Improve grazing infrastructure	€1,000/ha for roads, fencing and water	+ 1.0 t DM/ha/year grass eaten/utilised	58



The need for reseeding

As grass is our main feed during the main grazing season, and the primary source of winter forage in the form of grass silage, the low level of reseeding must be addressed. Reseeding must be combined with managing, and where necessary increasing, soil fertility. Ireland will continue to increase milk production and the focus on efficient production of this milk is critical to maintain our industry competitiveness. Teagasc have developed a national grassland database (PastureBase Ireland), and the initial results show that there is huge capacity on Irish farms to grow more grass. The objective of this handbook is to outline the key points in grassland reseeding and to ensure farmers making the investment in renovating grassland get the best possible result.

Why reseed?

Productive grassland farms must have perennial ryegrass dominated swards. Recent Moorepark research shows that old permanent pasture produces, on average, 3 t DM/ha per year less than perennial ryegrass dominated swards. Old permanent pasture is up to 25% less responsive to available nutrients such as nitrogen than a perennial ryegrass dominated sward. Reseeding is a highly cost effective investment. With regular reseeding the grass growth capacity of the farm can be increased substantially and the annual return of investment is large.



Objectives of reseeding are to create swards that:

- (1) Increase the overall productivity of the farm
- (2) Increase grass quality
- (3) Are responsive to fertiliser - at least 10 kg DM/kg N applied
- (4) Allow higher animal output - 8% higher milk output per hectare relative to permanent pasture
- (5) Increase grass utilisation
- (6) Reduce silage requirement
- (7) Increase the productivity of the farm (carry a higher stocking rate)
- (8) Can allow clover to establish

Reseeding Checklist

- Identify paddocks for reseeding (poorer performing paddocks; low perennial ryegrass content)
- Soil test and lime
- Sowing date
- Method of reseeding
- Spray off paddock
- When cultivating - prepare a good seed bed
- Choose appropriate grass cultivars
- Sowing rate
- Roll
- Slug and other pests
- Control weeds early
- Graze at 2 leaf stage
- Avoid poaching and over grazing

Cultivation techniques

How paddocks are prepared for reseeding depends on soil type, amount of underlying stone and machine/contractor availability. There are many different cultivation and sowing methods available. All methods, when completed correctly, are equally effective.

Key points

- Spray off old sward
- Graze sward tightly or mow to minimise surface trash
- Apply lime
- Choose a method that suits your farm
- Soil test
- Firm fine seedbed with good seed/soil contact is essential
- Roll after sowing



Cultivation techniques

	Do's	Do not's
Ploughing	Shallow plough. Develop a fine, firm and level seedbed	Plough too deep (>15 cm). Cloddy, loose seedbed
Disking	Graze tight, apply lime. 3-4 runs in angled directions	Forward speed too fast - rough, uneven seedbed
One-pass	Graze tight, apply lime. Slow forward speed at cultivation	Forward speed too fast – rough, patchy seedbed
Direct drill	Graze tight, apply lime and slug pellets. Wait for moist ground conditions (slight cut in ground)	'Trashy' seedbed - no seed/soil contact. Use when ground is dry and hard

Variety choice

The DAFM publish the recommended list, showing the Pasture Profit Index values and agronomic values of the evaluation on the same table (see <https://www.teagasc.ie/crops/grassland/pasture-profit-index/>).

The Recommended List has evaluated varieties across years and sites and is the only evidence available of the potential performance of grass cultivars in Ireland. Using varieties not on this list is basically poor decision making, as is buying grass seed on price. The varieties you use on the farm, will be there for 8-12 years, choosing to use cheap mixes, with non-recommended varieties will increase the chances of those varieties failing to perform on the farm.

When the decision to reseed is made, the next major decision is selecting the most appropriate grass variety or varieties. The first thing to consider is the primary target use of the field. Is it predominantly grazing or is it generally used as a silage paddock? How much tetraploid should be used? A balance between quality, dry matter productivity and sward density is generally what must be achieved.

The key traits in a seasonal grass based production system are:

- High quality
- High seasonal production
- Good persistency score

Differences between diploid and tetraploid varieties

Tetraploid varieties	Diploid varieties
Tall upright growth habit	Prostrate growth habit
Create more 'open' sward	Create a denser sward with less "open" spaces
Higher digestibility value	Generally lower digestibility and yield

Combining diploids and tetraploids in a mixture will create a dense, high quality sward – ensure you select varieties which express high performance in the key traits. Increasing the proportion of diploids on heavier soils is recommended to create better ground cover. However, tetraploids should be used on heavy soils. Choosing all dense varieties will compromise DM production and grazing utilisation

Key points when formulating a grass mixture

- Decide what the end use is – **grazing or silage** – formulate based on this
- Focus on the key traits increase the proportion of the varieties with the key traits
- Minimum of 3 kg of an individual variety
- There should be no more than three to four variety in a grass mix
- Sow 35 kg/ha (14 kg/ac) of seed
- Less than 7 days range in heading date between varieties

Grazing specific mixtures

- Varieties exhibiting high seasonal (Spring and Autumn) PPI values
- Varieties with high quality sub index values
- Use 40-50 per cent tetraploid varieties in mixtures on dry soils
- Use 15-20 per cent of highly persistent tetraploids on heavy soils
- Small/Medium leaf white clovers for dairy cows/cattle, small leaf white clovers for sheep

Silage specific mixtures, e.g. 2-cut system

- Varieties which have high silage sub index values
- High level of tetraploid (40%)
- Ensure proximity of heading dates
- Avoid low silage sub index diploids and poorly persistent tetraploids

Choosing the right white clover cultivar

White clover is used in grazed grassland. White clover cultivars are categorised by leaf size.

Small leaf white clover

- Lower yielding
- More persistent
- Tolerant of tight grazing, e.g. sheep grazing

Medium leaf white clover

- Intermediate for yield and persistency
- Suitable for cattle grazing

Large leaf white clover

- Higher yielding
- Aggressive and can dominate a sward

Small leaf white clovers are recommended for sheep grazing and medium leaf white clovers for dairy or beef cattle grazing.

In general to establish a sward with >25% white clover, which is the level required for an animal production benefit, 4 kg white clover seed/ha (1.5 kg/ac) should be included in the seed mix.



Management of Reseeded Swards

It takes about 11 months for a new sward to establish and settle down; therefore the management of the reseed in this period is important.

Management of New Reseeds

	Do's	Do not's
First 8 weeks	Graze at 2-3 leaf stage Spray weeds before grazing Nitrogen and P & K Slug pellets (if required)	Graze at high cover (>1400 kg DM/ha) Do not harvest for silage
Second grazing onwards	Graze at 1,200 - 1,600 kg DM/ha (6-8 cm) Re-spray weeds if necessary	Allow high covers to develop Graze in really dry or wet conditions
Autumn	Keep grazing at 1,200 - 1,600 kg DM/ha Graze off well before first winter (>4 cm) Light slurry application	Overgraze or poach Apply excessive slurry
Second year	Ensure the new sward receives adequate nitrogen Monitor soil P and K status	Overgraze or poach

Graze the new reseed as soon as the plants do not pull out of the ground. Plants will normally be 6 – 8 cm high. It is especially important that autumn reseeds are grazed before the first winter.

The first grazing does not have to be completed by the main grazing herd, calves or young stock may be a better option, particularly during poor grazing conditions.

All the benefits of reseeding can be lost after sowing due to:

- Poor soil fertility - poor establishment and tillering
- Grazing at high grass covers or cutting for silage – tiller/plant death
- Weed infestation (especially docks) – loss of ground cover
- Pest attack (frit fly, leatherjackets and slugs) – tiller/plant death

Tillering

- Tillering is the production of new grass plants by the main grass plant established from the seed
- The process of grass tillering is critical for successful sward establishment
- Tillering helps reduce the space available for weeds
- To encourage tillering:
 - Apply 40 kg N/ha 3-4 weeks after sowing
 - Graze the reseed when it is about 6-8 cm high
 - Continue to graze the reseed in the first year of production
 - Avoid cutting the new reseed for silage in the first year (if possible)



Weed Control

- Weeds in new reseeds are best controlled when the grass is at the 2-3 leaf stage
- Docks and chickweed are the two most critical weeds to control in reseeds
- High populations of other weeds such as fat hen, charlock, redshank, and mayweed can cause problems.
- It is essential to control docks and chickweed at the seedling stage and this is achieved by applying a herbicide before the first grazing
- To achieve the best lifetime control of docks in a sward, eradicating the dock at seedling stage in a reseed is the best opportunity
- Herbicide choice for dock control will depend on the presence of clover in the reseed (see Herbicide Guide)
- Chickweed can be a problem particularly where regular grazing is not expected to take place (silage fields), therefore herbicide choice is important
- You should consult your local adviser or merchant representative for correct herbicide choice
- Remember to keep the prescribed cross-compliance records and follow the instructions on the product label



Seedling dock



Reseeding Investment

Reseeding is one of the most cost effective investments that can be made on a grassland farm.

	Projected costs
	€/acre
Spraying	10
Glyphosate (Gallup 360) (Round-up (2 litre/acre)	16
Ploughing (€30)/ Till & sowing (one pass) (€30)	60
Fertiliser (2 bags × 10:10:20)	37
Fertiliser spreading	10
Levelling	10
Rolling	10
Grass seed	60
Post emergence herbicide sprays	30
Spraying	10
Costs (ex- post emergence sprays)	253

Useful Links

National Recommended List - sources

DAFM <http://www.agriculture.gov.ie/publications/2018/>

Teagasc <http://www.teagasc.ie>



Bermingham Farm Grassland Farmer of the Year Winner 2018



Farm Details:

- Owned Land: 44 ha
- Leased Land: 17 ha
- Milking Platform: 44 ha
- Start of Calving: Feb 6th
- Meal Fed (kg/cow):
 - 2017: 1465
 - 2018: 1690

Stock Numbers:

- Cows: 103
- Replacements 0-1: 26
- Replacements 1-2: 26
- Bulls: 4

Financial Performance(c/l) '18:

- Variable Costs: 17.99
- Fixed costs : 9.22

Year	Cows No.s	Farm Stocking Rate LU/ha (Milk Platform)	Herd EBI €	Milk Solids/ha (kg/ha) Milk Platform	Six Week Calving Rate %
2014	106	2.04 (2.48)	186	990	78
2015	101	1.98 (2.37)	198	1088	88
2016	103	2.0 (2.41)	137	1196	86
2017	107	2.25 (2.5)	141	1273	86
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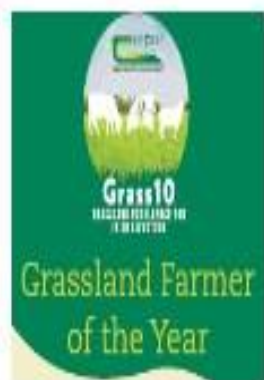
Grass10



*To increase the amount grass eaten to 10 T DM/ha
& Achieve 10 Grazings per paddock per year*

Where is Dairy Grazing??

- 8 ton Grass DM Eaten/ha (NFS)
- 7 Grazings per Paddock/yr (PBI)





Heavy Land Category Winner Grassland Farmer of the Year



Dairy Herd Performance Report Jan - Dec 2018



Herd Owner: DANNY BERMINGHAM

Table 3: Kerry Agri/ICBF Performance Score Card

	Your Herd	Kerry Agri Average	Kerry Agri Top 10%	Your Rank out of 100	Your Star Rating
Milk performance for 2018 (Jan - Dec) based on Kerry Agri data					
Fat + Protein (Kg/cow) Average Fat and Protein yield per cow for your herd	523	377	486	96%	★ ★ ★ ★ ★
Litres per Cow per Day Avg litres of Milk per cow from Jan - Dec 2018	17.54	13.36	17	93%	★ ★ ★ ★ ★
Fat % to end December 2018 Weighted average Fat % from Jan - Dec 2018	4.35	4.06	4.31	93%	★ ★ ★ ★ ★
Protein % to end December 2018 Weighted average Protein % from Jan - Dec 2018	3.57	3.44	3.58	89%	★ ★ ★ ★ ★
Average Milk Price (cpl) Incl. VAT Average milk price received from Jan - Dec 2018, (Includes Bonuses/Penalties, Excludes Levies)	36.6	34.3	36.4	92%	★ ★ ★ ★ ★
SCC (,000 cells/ml) The weighted average Somatic Cell Count for Jan - Dec 2018	140	218	108	77%	★ ★ ★ ★
Fertility & Calving data based on HerdPlus 2018 Calving Report					
Calving Interval (days) Average number of days between successive calvings for cows calved during the period	370	384	362	68%	★ ★ ★ ★
Spring 6 Week Calving Rate Number of cows/heifers calved within the first 6 wks (96) as a proportion of all cows calved during the Spring (114)	84%	68%	87%	85%	★ ★ ★ ★ ★

Start of Calving: Feb 6th

6-Wk Calving Rate: 85%



Name DANNY BERMINGHAM



	EBI(€)	EBI Sub Index							PTA's							
		Milk (€)	Fert (€)	Calv (€)	Beef (€)	Maint (€)	Mngt (€)	Hlth (€)	M Kg	F Kg	P Kg	F+P Kg	F %	P %	CI days	SU %
All Cows in Herd	159	60	58	39	-15	13	3	2	37	9.6	7.3	16.9	0.14	0.10	-3.0	1.6
Predicted 2020 Calves	237	86	94	47	-13	15	5	3	72	14.6	10.6	25.2	0.20	0.14	-4.6	2.8
Bulls Weighted Averages	314	113	129	55	-12	18	7	5	107	19.5	13.9	33.5	0.26	0.18	-6.2	4.1

(c). Other Performance Indicators

7. Cows Culled in Period

Number of cows culled (Sold/Dead) during the period. (123) as a proportion of eligible cows. (103)

Your Herd	Nat Avg
12%	22%

8. Average Lactations (Cows Culled)

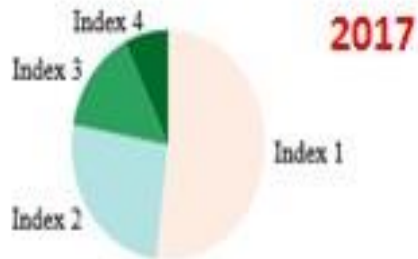
Average number of lactations of cows culled (Sold/Dead) during the period. (12)

Your Herd	Nat Avg
5.1	4.4





Phosphorus (P) Requirement P levels 2017 V's P levels 2019



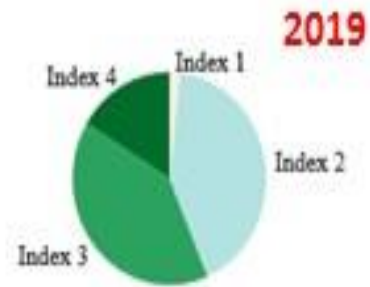
P Index	Ha's	%
1	33.30	52%
2	16.56	26%
3	9.44	15%
4	4.73	7%

P Index	Ha's	%
1	6.54	10%
2	22.30	35%
3	31.15	49%
4	4.07	6%





Potassium (K) Requirement K levels 2017 V's K levels 2019



K Index	Ha's	%
1	16.54	26%
2	42.45	66%
3	5.04	8%
4	0.00	0%

K Index	Ha's	%
1	1.16	2%
2	26.76	42%
3	25.69	40%
4	10.45	16%



Which method???



All methods effective when completed correctly

Reseeding

- Spring better than autumn
- Prepare a firm seedbed
- Use the Pasture Profit Index €

Soil Fertility at Reseed

- Soil fertility is critical for a successful reseed
- Soil test, lime and appropriate fertiliser (N, P and K)
- Lime required for some methods of reseeding

Post sowing management

- Ensure seed bed is rolled following seeding
- +30 Units N/Acre (Weeks 4-5)
- Post emergence spray - 5-6 weeks after reseeding
- 1st grazing: 700 – 1000 kg DM/ha
- Graze every 17 – 21 days (1000 – 1400 kg DM/ha)
- Avoid silage in first year if possible

Take Home Messages

- Seedbed Preparation & post-sowing management crucial for success
- Tetraploid varieties can be used where grazing infrastructure is good



An Roinn Talmhaíochta, Bia agus Mara
Department of Agriculture, Food and the Marine



Soil Fertility – 5 steps to setting the farm up to grow grass!

Bermingham Soils

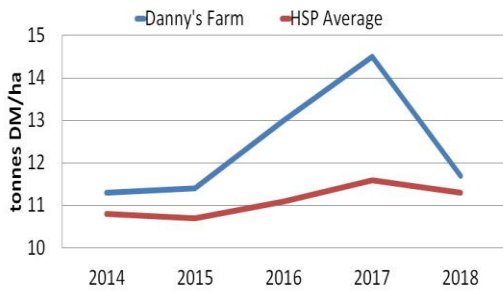
Lime Requirement - 35%
Deficiency Soil P - 45%
Deficiency Soil K - 44%

Dairy Soils

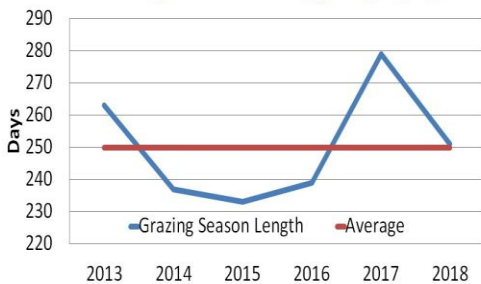
Lime Requirement - 50%
Deficiency Soil P - 55%
Deficiency Soil K - 54%



Grass DM production 2014 – 2018 (t DM/ha)

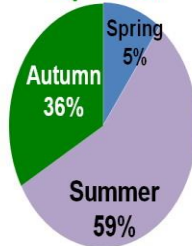


Grazing Season Length (days)

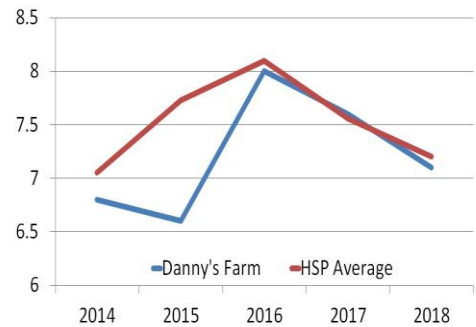


38 walks completed in 2018

Grass production by season



No. of grazings/cuttings per paddock/year



Take home messages

- Measurement is key to managing grass
- Potential to grow & utilise more grass
- Target >10 grazings per paddock



Grazing Management: The Next 60 Days!!

Current Issues:

- > End of 1st Rotation
 - > 1100-1200 in 1st Pdk
- > Catch-up on fertiliser
- > Making enough silage

Growth Period	Grass Grows/Rotn (kg/ha)	Rotn. Length (days)	No. of Rotations	Growth (kg/ha) required/day
Mid Feb to Mid Apr	975	65	1	15
Apr 7 to Aug 5	1400	28	2-7	70
Aug 8 to Aug 31	1625	25	8	65
Sep 1 to Oct 10	1900	40	9	46
Oct 11 to Nov 20	1100	40	10	27
Total Grass production/ha	14000	200	10	

Improve Grass Supply

- > **Nitrogen Fertiliser:**
 - > 90 units N/ac May 1st
 - > 1 unit N/Day in Rotation
- > **Sulphur Application:**
 - > ASN, CAN/Urea+S
- > **P&K Application:**
 - > 18:6:12+S

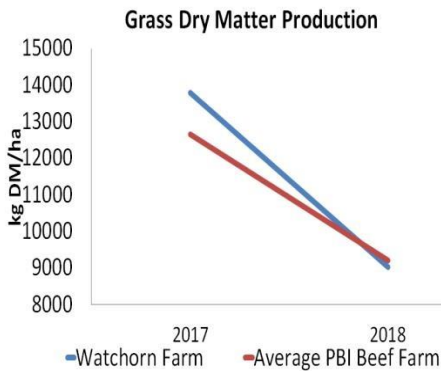


Grazing Targets:

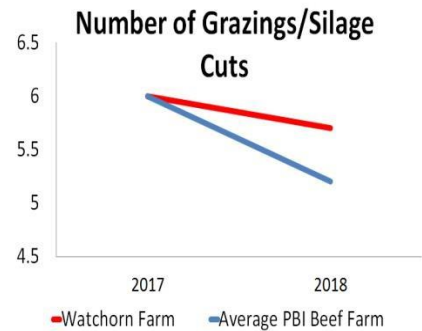
- > Rotation Length 18-20 days
- > Stock Herd @ 3.5+ cows/ha
- > Enter 1400kg Grass DM/ha
- > Avoid Topping & Bale Surplus
- > Walk the farm weekly
- > Operate at 180-200 kg/cow

Silage Plan:

1. Requirements vs. Supply
2. Building a silage reserve
3. Surplus grass as bales
4. Stock at 3.5+ cows/ha to increase silage ground

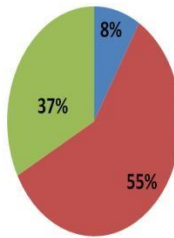


32 Walks Completed



Seasonal DM Production

Grazing Season Length – 300 days
Turn out date – Jan 15th (2019)
Housing date – Dec 1st (2018)



Take home messages

- Measurement is key to managing grass
- Potential to grow & utilise more grass
- Target >10 grazings per paddock

Shorten Winter = Farm Objective



Setting the farm up to grow & utilise grass!



Investment	Cost	Impact	Annual return%
Increase soil P & K	20 kg/ha of P 50 kg/ha of K	+1.5 t grass DM/ha/yr	152
Reseed farm (8yr cycle)	€650/ha (€260/ac)	+1.5 t grass DM/ha/yr	96
Improve grazing Infrastructure	€1000/ha (€400/ac) for roads, fencing & water	+1 t grass DM/ha/yr	58



"Grazing infrastructure needs to be improved on extremities of grazing platform"
 Judges Report

Heavier Soils Require:

- ✓ More P, K and lime due to the soil make up and higher level of rainfall
- ✓ More investment in grazing infrastructure but return is higher
- ✓ Additional investment in drainage systems in some paddocks

Grow More,

Graze More,

Earn More!



Thanks!!

