

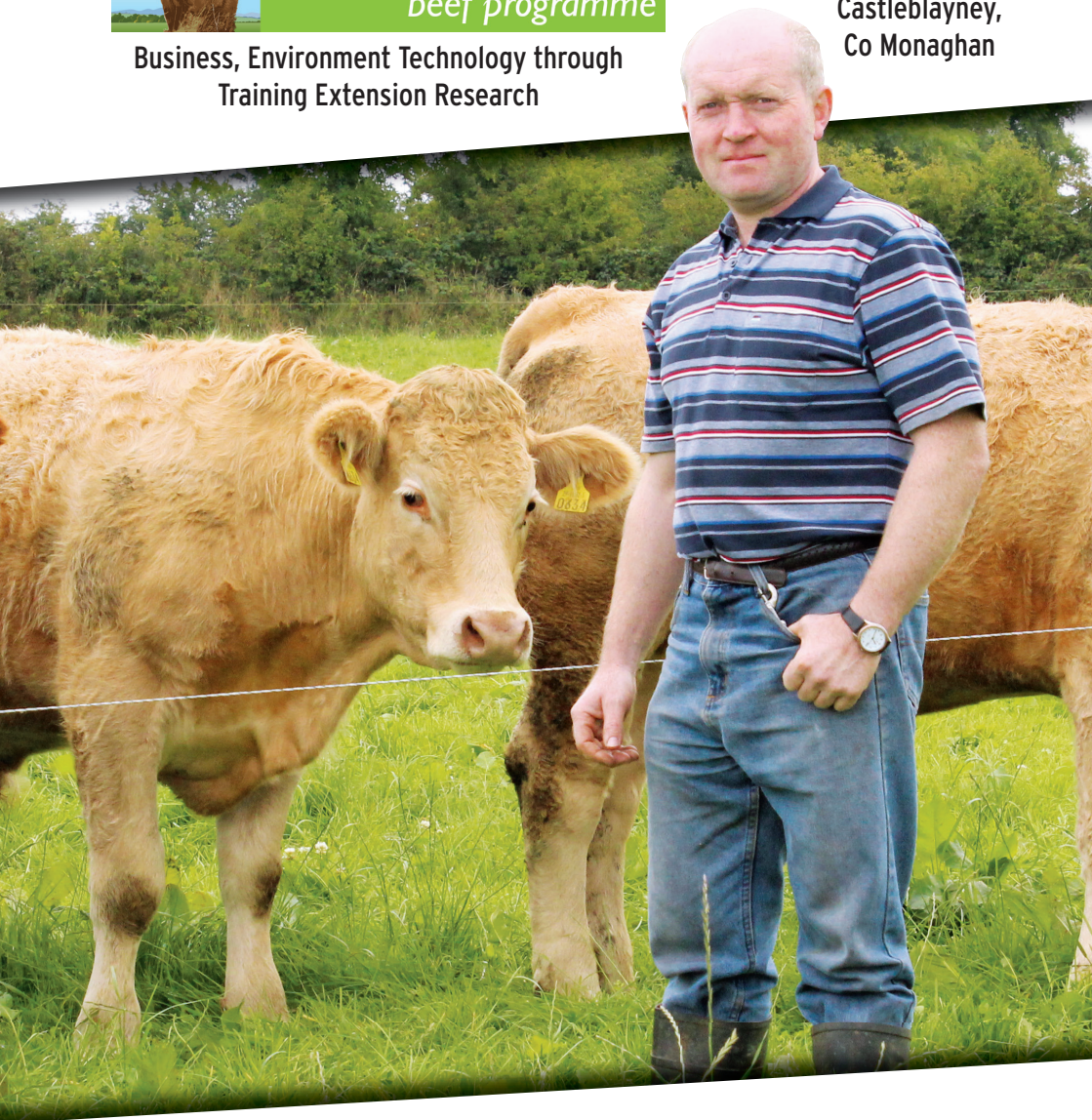


Business, Environment Technology through
Training Extension Research

PHASE 2 - FARM WALK

16 September 2014

David Mitchell,
Shantonagh,
Castleblayney,
Co Monaghan



A Teagasc/Irish Farmers Journal initiative, supported by industry sponsors





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The Teagasc/Irish Farmers Journal BETTER Farm Phase 2 management team (clockwise, from top left): Adam Woods, Paul Crosson and Paul Maher, Teagasc, Darren Carty and Kieran Mailey, Irish Farmers Journal, and programme advisers Catherine Egan, Peter Lawrence and Alan Dillon.

**Exclusive content in the
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Welcome note

I would like to welcome everyone to my farm today. Since joining the Teagasc/*Irish Farmers Journal* BETTER farm programme in 2012, my farming enterprise has been undergoing a number of changes.

The changes have been made in simple steps and are proving to be very beneficial. By completing a three-year plan for the farm, it was clear that there was potential for improvement in the suckler enterprise.

I feel the work that has been done so far has been worthwhile when I see the benefits it has brought.

Finally, I would like to thank my Teagasc advisers, Adam Woods and Conal Murnaghan, for helping my farm to progress in the right direction.

DAVID MITCHELL

On behalf of the management team of the Teagasc/*Irish Farmers Journal* BETTER farm beef programme, I would like to welcome you to today's event. Teagasc and the *Irish Farmers Journal* have worked closely together over the last five years to make the programme a success. This would not have been possible without the commitment and drive of the participants.

David has been very open to new ideas and advice and we commend him for this and the improvements he has already put in place. With his management ability and commitment, we have no doubt that he will continue to push his business forward and we look forward to helping him achieve his potential.

ADAM WOODS, PROGRAMME MANAGER

PHYSICAL SYSTEM

Measure	2011	2014 (Target)
	Suckler to beef/store	Suckler to beef
Stocking rate (LU/ha)	1.53	2.0
Land base (adj ha)	48	48

PURCHASES

Purchases	0	0
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LIVEWEIGHT OUTPUT

Liveweight output (kg/ha)	544	720
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FINANCIAL SYSTEM

Output value (€/ha)	1,356	1,670
Variable costs (% of output)	€961 (71%)	€800 (48%)
Gross margin (€/ha)	395	870



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Monitoring grass quality is key

David Mitchell farms in Shantonagh, Co Monaghan, where he runs a suckler herd of just over 40 cows and a mid-season ewe flock comprising of 75 ewes. All progeny are taken through to finish for both the suckler herd and sheep flock.

David's farm would be typical of those found in the region, located on drumlin ground with mixed soils.

The farm extends to approximately 48ha of grassland and is split into four separate blocks with two farmyards. Drainage has been carried out to keep land in good order.

David runs a split 60:40 spring-calving and autumn-calving herd. He runs a small number of purebred Hereford cows, calving in the autumn, to suit the sale of young bulls for breeding.

Cows are mostly Limousin and Simmental cross cows. A Charolais stock bull is run with the commercial cows and AI is used to breed replacements.

David has been a member of the

Monaghan Quality Cattle Producer Group since it was established by local beef farmers in 1988.

There are approximately 80 members of this group currently supplying over 6,000 head annually to ABP in Clones.

David is also a member of the Monaghan Lamb Group and his lambs are sold to Dawn Meats Ballyhaunis.

Cattle are finished as steers and heifers. Heifers are slaughtered at 21 to 22 months and steers at 25 months. Target slaughter weight for steers is 390kg to 400kg and heifers around 320kg.

The finishing diet includes good-quality silage and a high-quality beef nut, fed at 5kg to heifers and 8kg to steers for the final finishing period.

One of the main benefits David has seen since getting involved in the BETTER farm programme is the potential to add cheap gain from grass.

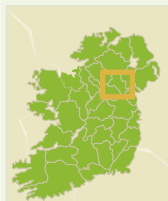
A combination of earlier turnout and constant monitoring of grass quality has enabled David to offer top-quality grass to his animals throughout the grazing season.

He has used the on-farm weighing facility offered by ICBF to monitor individual animal performance throughout the grazing season.

Thirteen spring 2013 steers have gained in excess of 1.1kg/day from turnout to weighing on 4 September 2014 and averaged 545kg live-weight.



David Mitchell's farm



Physical and financial performance

The use of accurate information in terms of financial and physical data are crucial, not only in highlighting the strengths and weaknesses of a farming system, but in laying down targets and keeping a focus.

The profit monitor is a valuable tool, allowing farmers to examine how the farm is performing and to measure physical and financial performance under a number of key headings such as:

- Gross output/ha.
- Gross margin/ha.
- Variable costs/ha.
- Stocking rate.
- kg liveweight/ha.

David completes a profit monitors annually. This gives him a better overall picture of how his farm is performing, rather than focusing on one year where individual circumstances may give a distorted picture, for example increased production costs in 2012. It will also allow David to identify



areas of weakness that need improvement.

The target output of beef produced on this farm is 720kg/ha. David produced 502kg of output in 2013, which was 220kg below the target. This has been due to a number of reasons. Cow numbers have been slow to increase due to two very difficult years farming on heavy land like David is working on.

Table 1: Profit monitor yearly comparison

Year	Area farmed (ha)	Stocking rate LU/ha	Lwt output kg/ha	Value of output €/ha	
2011	48	1.78	560	1136	
2012	48	1.53	544	1356	
2013	42	1.95	502	1218	
Avg	46	1.75	535	1237	



An IBR outbreak in 2013 also compounded this problem, reducing output and sales. While focusing on increasing output is important, it is also essential to keep production costs under control.

Maximising the proportion of high-quality grazed grass in the animal's diet, in conjunction with good herd health and good breeding performance, are central to reducing production costs.

Due to the two difficult years in 2012 and 2013, concentrate and purchased forage costs increased during this time.

However, David is confident that this can be turned around in 2014.

The projected concentrate bill is much lower than 2012 and 2013, when cattle were rehoused on numerous occasions during the summer months as a result of the weather conditions.

	Feed	Fert/lime	Vet	Contractor	AI	Other	Gross margin
	221	129	46	141	14	95	489
	391	136	88	241	29	75	385
	361	179	115	227	31	112	164
	331	148	83	203	25	97	349

Maximising growth rates

Since the beginning of the Teagasc/*Irish Farmers Journal* BETTER farm beef programme in 2009, the emphasis has always been placed on prolonging the grazing season, improving sward quality and maximising animal performance from grazed grass as a means of increasing output and reducing production costs.

Proper subdivision of grazing land is essential to successfully managing pastures and achieving desired rotation lengths.

Paddock infrastructure on David's farm has been improved over the last number of years with permanent electric fences and good positioning of water troughs that allows fields to be

subdivided with wire reels and plastic stakes easily.

David makes good use of roadways on the farm, making movement of cattle easier throughout the year.

A central roadway on one outfarm also lends itself to getting out early with slurry in the spring. The aim on the farm is to graze paddocks out in three days and allow them to regrow in 18 to 21 days.

David walks his farm weekly to measure grass growth. Based on grazing days ahead during the grazing season, he makes decisions as to whether he needs to take out any surplus grass as baled silage or spread extra fertilizer if facing a deficit.

Autumn grassland management

Spring grassland management starts in September and a plan needs to be put in place on farms in the autumn if early turnout in spring is to be realised.

It is the grass that is grown in autumn that will be grazed next February. It is important to build up this bank of grass in a planned manner in October before growth ceases for the winter months.

For this to happen, David has spread fertilizer on paddocks in mid-August to increase his grazing days ahead of stock. The rotation length should be increased from 25 to 30 days in late August to 35 to 40 days in late September.

This is achieved by reducing demand through cattle and sheep

Table 1: Autumn grazing planner

Week	Grazing area		Actual area grazed per week
	per day (ha)	per week (ha)	
3-10 Oct	1.0	7.2	
10-17 Oct	1.0	7.2	
17-24 Oct	1.0	7.2	
24-31 Oct	1.0	7.2	
31 Oct-7 Nov	1.4	9.6	
7-14 Nov	1.4	9.6	

sales and also housing any stock that are close to finish.

David aims to start closing fields around the first week of October and he will close off the driest fields first, so they can be grazed first the following spring.

As can be seen in the table, David will aim to have 60% of the farm closed by the last week in October with the remaining 40% closed by mid-November.



Foundation for grass growth

The maintenance and improvement of soil fertility is essential to maximise grass growth. As part of the BETTER farm programme, David has soil sampled the entire farm, and subsequent fertilizer applications have been planned to correct any imbalances.

A soil pH of between 6.3 and 6.5 is the target to allow for maximum uptake by roots of the grass plants of essential nutrients, either present in the soil or applied as fertilizer. Correcting the pH is the first requirement in optimising grass growth.

The results set out in Table 1 show that all but two of David's samples are pH 6.3 or higher, with only one sample dropping below pH 6.0.

Grassland soils maintained at pH 6.3 and above will release approximately 60kg to 80kg/ha more nitrogen (N) than soils with pH 5.0. This represents a potential cost saving of €60 to €80/ha.

Soil phosphorus (P) is an important element in the soil to ensure good root development of the grass plant, which in turn aids in the uptake of other essential nutrients from the soil. The target

for soil P is index 3.

The soil samples indicated that David's farm is low in soil P, with 27% at index 1 and the remaining 73% at index 2.

Based on this analysis, David has been spreading more compound fertilizer containing phosphorus, as opposed to straight nitrogen, which was sometimes applied in the past.

In contrast, the soil potassium (K) levels are, in general, good on the farm, with 82% at index 3 or above. Potassium increases stem strength, improves drought resis-

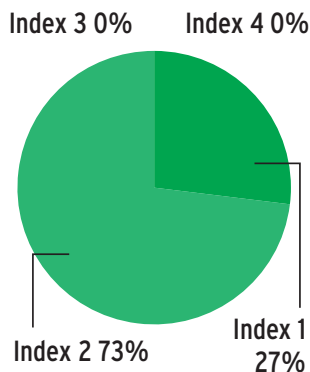


Table 1: 2013 Grassland soil sample results

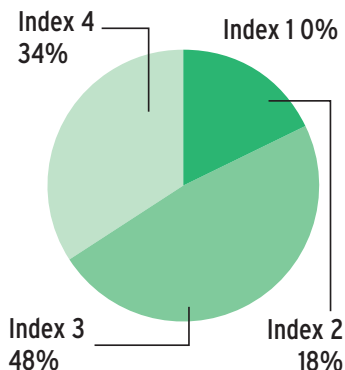
Soil sample	Area (ha)	pH	P index	K index
1	4.25	5.94	2	4
2	3.73	6.36	2	3
3	5.08	6.31	1	3
4	3.86	6.35	2	2
5	3.53	6.19	1	3
6	4.27	6.81	2	4
7	5.91	6.68	2	3
8	3.72	6.32	1	3
9	6.86	6.35	2	4
10	4.6	6.26	2	2

**Figure 1**

P index of farm

**Figure 2**

K index of farm



tance, cold tolerance and, most importantly, increases yield.

Cattle slurry is a good source of K and David is targeting the two samples that tested low in K with an annual application of cattle slurry.

Too much soil K may pose a tetany risk on suckler farms as it blocks magnesium uptake by the grass plant. Therefore, based on the soil results, David is not applying any K fertilizer on his grazing ground. The compound fertilizer applied this year was 25:4:0, which contains N and P but no K.



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Breeding replacements from within the herd

David has been breeding his own herd replacements for a number of years. However it has been difficult to increase cow numbers from within the herd.

Annual culling of problem cows and not having a large enough number of heifers born means that the herd is basically maintaining numbers, rather than expanding.

In 2014, the decision was taken to purchase additional cows to increase numbers at a faster rate.

The aim for the farm is to get to 50 cows as soon as possible and, with this in mind, five Angus cross cows were purchased this spring with calves at foot.

These cows are also dairy-bred cows and should be perfect animals for David to breed his replacements from in the future. David likes to keep a medium-sized functional cow that is not too heavy for the difficult drumlin soil which he farms.

David's selection criteria for choosing herd replacements is outlined as follows:

1. GOOD FERTILITY

David operates a split calving system, so keeping calving tight to a 12-week period is very important to avoid calving all year-round. In

order to breed replacements with good fertility, David focuses on using maternal AI straws on his early-calving cows with proven milk traits.

2. GOOD MILKING ABILITY

David weighs his cattle regularly and now sees the importance of having a cow with good milk production from grass to drive on calf growth from birth to weaning. Heavier weaning weights increase cow output and heavier store cattle to put back to grass.

3. EASILY CALVED AND DOCILE

David is the sole labour unit on the farm, so cattle have to be easily handled. Reducing calving difficulties is one area he concentrates on, with sires that can be calved with little trouble. Replacements selected are not heavily muscled and have a very good width of pelvis. Any cows that are repeatedly hard to calve are culled and their heifers finished.

4. EASILY FED

As some grazing ground is heavy, it is important that cow size does not get too big. A medium-sized Limousin or Simmental cross cow is desired that will put on flesh at grass that is utilised during the winter to save on silage.

Table 1: Three-year calving performance statistics

	2011-2012	2012-2013	2013-2014	Current national averages
Total no. of calvings	43	40	37	
No. of cows	33	36	33	
No. of heifers	10	4	4	
Calving interval (days)	393	388	388	
Mortality at birth %	2.3%	2.4%	2.7%	
Mortality at 28 days %	11.6%	4.8%	8.1%	4.5
Females not calved in period %	0%	0%	3%	5.6
Calves per cow per year	0	0	3	13
Births with difficult calving %	0.81	0.95	0.84	0.79
AI-bred calves		4.8	5.4	3.3





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Maximising cattle performance

One of the main aims for David when he joined the BETTER farm programme was to produce beef from his suckler herd in as efficient a way as possible.

It was identified at an early stage that there was potential to achieve higher liveweight gain at low cost from grass through a combination of extending the grazing season and ensuring grass was always of optimum quality.

The driest fields on farm are now kept for getting stock out to grass early in the spring. These fields are closed off first in rotation from mid-October onwards.

David regularly weighs the stock on the farm. Figure 1 outlines the performance of his 2013 steers during last winter and through the 2014 grazing season.

Daily liveweight gain over the winter housing period was 0.49kg/day. During the grazing period from April to early September, these steers gained 1.1kg/day.

2014 GRADING PERFORMANCE

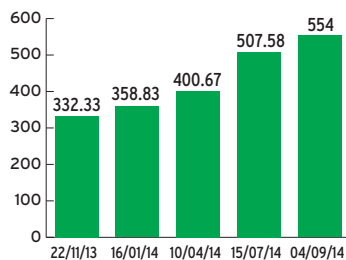
As part of his involvement in a producer group, David has made a commitment to produce quality cattle that are consistently in-spec.

Table 1 outlines the carcass grades for steers slaughtered in spring 2014. They were killed at an average age of 27 months and had an average carcass weight of 386kg.

The steers were finished on a silage and meal diet, with meal levels built up to 7kg over the final finishing period. A total of 84% of steers were inside the specifications for Bord Bia QA payments.

Figure 1

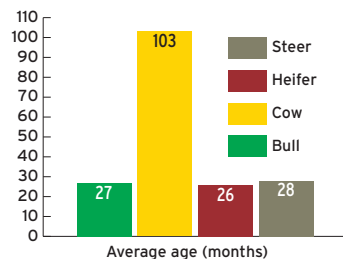
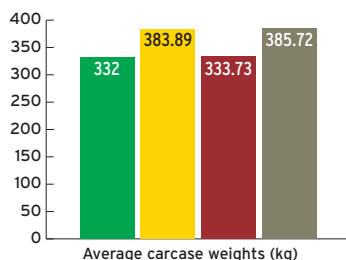
2013 spring-born steer weights

**Table 1: Carcase classification for 18 steers finished in spring 2014**

	U=	U-	R+	R=	R-	O+
3-			1			
3=			1	1		
3+	1		2		2	
4-			1	2		
4=			2	1	1	2
4+				1		

Figure 2

Total on-farm slaughtering 2014





A to Z of FARM SAFETY



A

Always consider **SAFETY** on the farm.

B

BULLS: Beware of aggressive animals on your farm. Be sure to cull cross bulls, cows, rams, stags from your farm.

C

CHILDREN: Always supervise children on the farm, especially during machinery operations.

D

DRAWBARS: Never let anyone ride on the drawbar of your tractor or any other machinery. Do not allow anyone ride in an open trailer.

E

ELECTRICITY can kill. Beware of overhead power lines and buried cables.

F

FORESTRY and tree felling: Take care not to be caught under falling trees and logs. Attend a chainsaw and tree felling course.

G

GAS: Slurry gases can kill. Remove all stock from slatted sheds before agitating. Never enter a shed when slurry is being agitated. Close agitation point after each use.

H

HORSES: Some horses can be dangerous. Always wear safety equipment e.g. helmet when handling or riding horses. Be wary of being kicked by horses.

I

INSPECT: Check safety equipment on your farm regularly, e.g. machinery safety covers, PTO guards, fire extinguishers and First Aid kits.

J

JAWS: Keep away from blades of shear grabs, mowers, revolving knives and chainsaws.

K

KEEP CLEAR of machinery such as tractors, HiMacs, bulldozers when they are working. Stay in their line of vision and wear a high visibility jacket or vest.

L

LIVESTOCK: Be wary of being kicked or crushed while working in pens, yards or fields with livestock.

M

MACHINERY: Ensure safety covers and PTO guards are in place and working on all farm machinery. Avoid wearing loose clothing near machinery.

N

NEVER start a tractor when you are standing on the ground alongside it.

O

OVERTURN: Remember tractors have a high centre of gravity and can overturn easily. Drive slowly over uneven ground.

P

PESTICIDES and other toxic chemicals: Keep them out of the reach of children. Read the label and follow the manufacturer's advice on proper use, storage and disposal.

Q

QUAD bikes: Always wear a safety helmet when using a quad bike. Avoid letting children on them. Drive slowly over rough ground.

R

ROOFS: Use a roofing ladder when working on farm sheds. Stay clear of skylights.

S

SAFETY: Complete and update your Risk Assessment Document. This can be completed online at www.farmsafely.com. Take action on risks highlighted.

T

TRAINING: Attend a Farm Safety training course NOW at your local Teagasc centre.

U

UNTIDY: Poorly maintained farmyards/farm can lead to accidents. Keep your farmyard/farm neat, tidy and well maintained.

V

VISION: Your eyesight is vital – protect it. Wear safety goggles where your eyes are in danger.

W

WARNING SIGNS should be erected to warn the public of dangers or hazards such as "Tractors Crossing", "Beware of Bull".

X

XTRA: Be extra careful when there are children or elderly people on the family farm. Restrict access to dangerous ponds, tanks, unstable heights etc.

Y

YOU and YOUR FAMILY: Take every precaution to remain safe and healthy. Assess every farm task carefully for potential dangers or risks. Organise and complete tasks with safety in mind.

Z

ZOO NOTIC DISEASES and infections which can be transmitted from animals to humans. E.g. TB, Toxoplasmosis, Weil's Disease, E.Coli ... Wear gloves when handling livestock. Always wash your hands after being in contact with animals.