

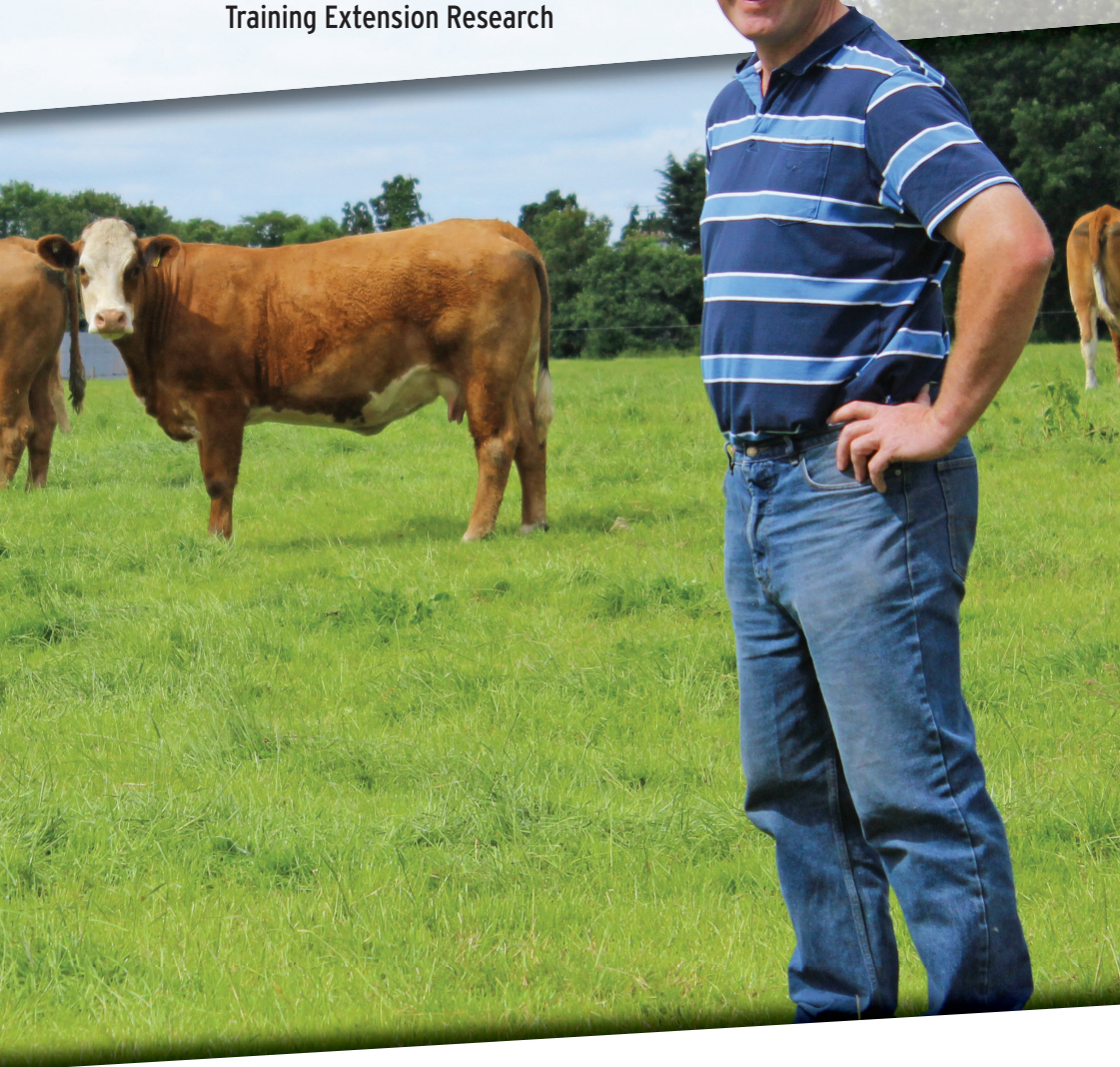


Business, Environment Technology through  
Training Extension Research

## PHASE 2 - FARM WALK

9 July 2014

Tom Halpin,  
Carlanstown,  
Kells,  
Co Meath



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





Business, Environment Technology through  
Training Extension Research



➤ Welcome note.....	3
➤ Farm layout.....	4
➤ Farmer focus.....	5
➤ Measuring performance.....	6
➤ Carbon navigator.....	8
➤ Grassland management.....	10
➤ Cow type.....	12
➤ Animal performance.....	14
➤ Herd health.....	15
➤ Phase 2 participants.....	16

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  
Irish Farmers Journal  
in print and online at  
[www.farmersjournal.ie](http://www.farmersjournal.ie)**



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



Edited by: Kieran Mailey. Production/artwork: Brian Murphy. Printer: Johnswood Press (info@johnswoodpress.ie)

## Welcome note

I would like to welcome everyone to Robertstown and I hope you find your visit today enjoyable, informative and worthwhile.

I have been developing my suckler herd over the last 10 years and will hopefully continue to progress. My involvement in Teagasc/*Irish Farmers Journal* BETTER farm programme has helped me focus on the key areas to improving output and ultimately profitability and I would like to thank the Teagasc team of Adam Woods, Peter Lawrence and Ned Heffernan for their involvement.

I want to especially acknowledge the opportunity to farm given to me by my late father Tom and mother Bridie and the continued support of my wife Anne, and family Matthew, Claire and Laura.

**TOM HALPIN**



### PHYSICAL SYSTEM

Measure	Current 2011	Target 2016
	Suckler to weanling	Suckler to weanling
Stocking rate (LU/ha)	1.49	2.0
Land base (adj. ha)	63	63

### PURCHASES

Purchases	0	0
-----------	---	---

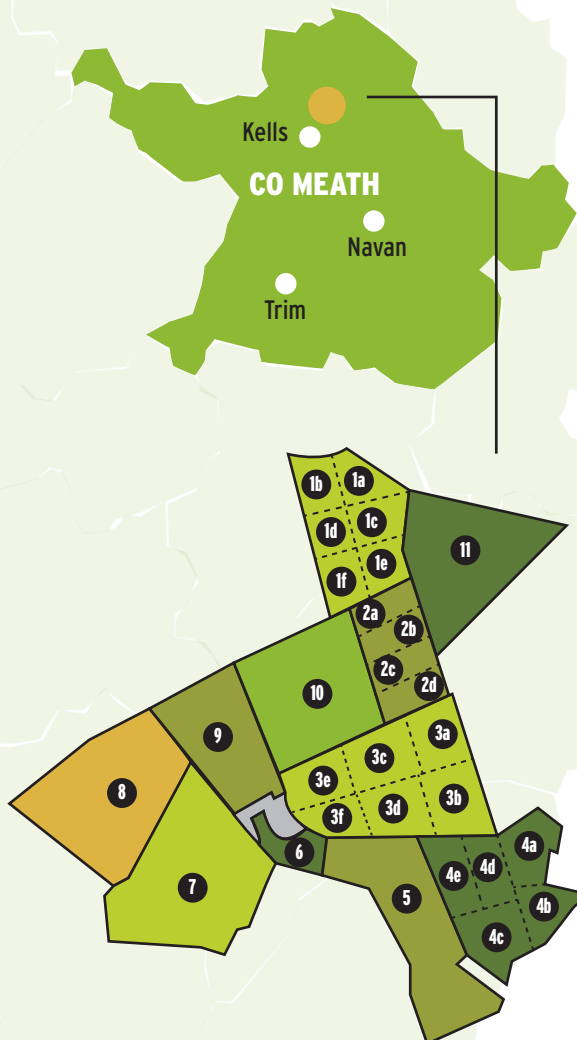
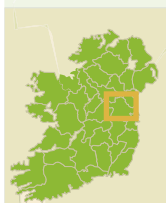
### LIVEWEIGHT OUTPUT

Liveweight output (kg/ha)	594	739
---------------------------	-----	-----

### FINANCIAL SYSTEM

Output value (€/ha)	931	1,625
Variable costs (% of output)	356 (38%)	625 (38%)
Gross margin (€/ha)	575	1,000

## Tom Halpin's farm





## Excellent control of variable costs



**T**homas Halpin is operating a suckler to weanling system, with two distinct calving periods, February to March and June to July.

Cow numbers have risen steadily from 70 cows in 2009 to close to 90 with a 60:40 split between spring and summer calving.

Cow type is predominantly Charolais x Limousin or Charolais x Simmental, with a Simmental bull used in the past to breed replacements and a Charolais bull used on the rest of the herd. Currently, a Charolais bull and Limousin bull are being used.

Male progeny are sold in two groups, with spring-born bulls sold in December at over 400kg and summer bulls sold in early July approaching 500kg.

Cow fertility and breeding performance on the farm is excellent, with a tight calving pattern and a calving interval of 365 days.

Weight for age, calf quality and overall animal performance on the farm are excellent and, in terms of output and efficiency, physical performance is very good.

When the profit monitor was completed, it was found that variable costs were well below average, at around 30% of gross output.

When the profit monitor was completed, it was found that variable costs were well below average, at around 30% of gross output

When a three-year plan was being drawn up for the farm as part of the BETTER farm programme, this excellent livestock performance and good control of costs was noted and it was felt that increasing stocking rate, coupled with the existing efficiencies on the farm, would ultimately lead to increased margins.

Stocking rate was naturally diluted by short-term grazing land, which became unavailable and a new challenge was faced with managing existing stock numbers on a lower number of hectares. Stocking rate has increased from 1.49 LU/ha to just over 2 LU/ha.

This increase in stocking rate on the home farm is the critical factor in achieving higher output per hectare.

Improving grassland management has been the key focus on the farm, through more grazing divisions, earlier turnout, grass budgeting and increased fertilizer use to support this higher stocking rate.

Earlier turnout in spring was hampered by an early lambing flock. Although the sheep enterprise was profitable, grazing ewes in spring limited the amount of weight gain from spring grass and prolonged winter feeding in cattle.

This year, the sheep flock has been sold off and the focus will now be on early turnout of cattle.

In the future, there are decisions to be made regarding finishing cattle on the farm or selling live.



# 'If you can't measure it,

**T**he 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 and monitoring progress, but in laying down targets and keeping a focus.

As part of the BETTER farm programme, a three-year plan was drawn up and profit monitor completed for Tom's farm.

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 per hectare, gross margin per hectare, variable costs per hectare, stocking rate, kilogrammes liveweight per hectare and kilogrammes liveweight per livestock unit.

The profit monitor also allows farmers to benchmark their performance against similar systems, in Tom's case, other beef farmers.

The profit monitor also allows Tom to monitor progress over time. Tom has been completing profit monitors since 2009. Com-



pleting a number of profit monitors will also give him a better overall picture of how his farm is performing, rather than focussing on one year where individual circumstances may give a distorted picture. It will also allow Tom to identify areas of weakness that need improvement

Insufficient output is one of the main reasons for poor profitabil-

**Table 1: Profit monitor yearly comparison on cattle enterprise only**

Year	Area farmed (ha)	Stocking rate LU/ha	Lwt output kg/ha	Value of output €/ha	
2011	69.4	1.49	594	931	
2012	52.4	2.15	823	1,542	
2013	56.0	2.09	662	1,488	

# you can't manage it'



## FUTURE PLANS

- Maintain present stocking rate through better grassland management.
- Increase output further to target €1,800/ha.

ity on suckler farms, and if gross margin is to be improved, the level of output needs to be examined. Output can be targeted in terms of kilogrammes of liveweight produced per livestock unit and kilogrammes produced per hectare.

As cattle and breeding performance on the farm were deemed to be very good, increasing stocking rate and the resultant increase

in output was the driver of profitability on the home farm

In 2013, he no longer had the use of rented ground and as a result, stocking rate would be based on his own 63ha.

To measure output from cattle on the farm, this enterprise used 56ha of grassland.

When we examine the profit monitors completed for the farm, the stocking rate has risen from 1.49 LU/ha to 2.09 LU/ha, a 39% increase.

Gross margin per ha has also increased from €575/ha to €767/ha, a 31% increase in the past two years. The average gross margin per hectare on the 34 participating farms in 2013 dropped by 17% when compared with 2012.

As a result of the increased stocking rate on the home farm and the increased need for more grass, we have seen an increase in variable costs, in particular fertilizer.

Fertilizer costs, which were traditionally low on the farm at €58/ha, have risen to €199/ha in 2013. Variable costs, despite a slight rise, are well in line with the level of output.

Feed €/ha	Fert/lime €/ha	Vet €/ha	Contractor €/ha	Other €/ha	Gross margin €/ha
111	58	56	92	356	575
509	112	65	134	904	637
263	199	57	135	721	767

# The carbon navigator

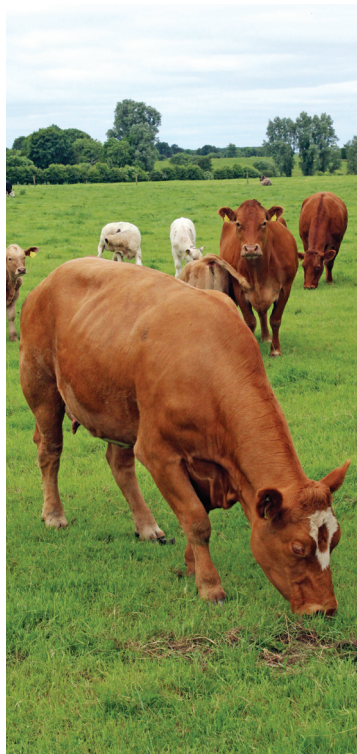
- reducing the carbon footprint and improving profits on the Halpin farm

**T** eagasc and Bord Bia have developed the carbon navigator to assist farmers to identify measures for reducing the carbon footprint by setting targets for key aspects of their production system. The programme focuses on mitigation options that improve farm profitability.

Tom has completed the carbon navigator for his spring-calving herd and the targets set and impact on carbon footprint and profitability are outlined below.

The programme also enables Tom to rank his current and target performance against other farmers. This is based on a scoring chart, which ranks Tom's performance from low to excellent. ➤ Extending the grazing season reduces greenhouse gas (GHG) emissions by reducing slurry stored and increasing the consumption of grazed grass. Tom's target is to advance turnout date to early March.

➤ Reducing age at first calving for replacement heifers reduces the amount of GHG produced prior to the heifer calving for the first time. Due to the split calving



Increased animal performance improves average lifetime daily gain and reduces age at slaughter.

“

The targets set for Tom Halpin's farm can potentially reduce the carbon footprint of beef produced on this farm by 10% and also increase profitability by €10,500

system on Tom's farm, age at first calving is older than the optimum of 24 months of age.

➤ Improving the calving rate of suckler beef cows helps to reduce beef carbon footprint by diluting GHG emissions over a greater quantity of beef. Tom is achieving an excellent calving rate of 0.92 calves per cow per year, close to the target of 0.95 calves/cow/year.

➤ Increased animal performance improves average lifetime daily



Year 2012		Current	Target	Chart	GHG change	€ benefit
Grazing season - suckler cows	Turnout Date	20/Mar	01/Mar		-1.7%	+€1756
	Housing Date	01/Nov	01/Nov			
Grazing season - yearlings/followers	Turnout Date	31/Mar	01/Mar		-2.0%	+€1710
	Housing Date	01/Nov	01/Nov			
Age at first calving	Age at first calving (months)	29.37	28.00		-0.4%	+€825
Calving Rate	Calving rate (calves/cow)	0.92	0.95		-2.5%	+€1548
Live weight performance	System	Bulls & Heifers	Bulls & Heifers		-0.3%	+€3030
	Lifetime live weight per day of age (g)	1200.00	1250.00			
Nitrogen Efficiency	Total CAN and equivalent N in Compounds (t)	30.00	25.00		-2.1%	+€1500
	Total urea used (t)	0.00	0.00			
	Total concentrate fed (t)	20.00	20.00			
	Output kg beef live / ha	622.00	750.00			
Slurry Spread Timing	% in Spring	80	90		-0.6%	+€55
	% Summer following 1st cut	20	10			
	% Later in Summer	0	0			

gain and reduces age at slaughter. Therefore, GHG emissions are diluted over greater output of beef. Tom is already achieving very high liveweight gains. However, further modest increases are possible.

➔ Improving nitrogen efficiency reduces direct nitrogenous losses to the atmosphere and also indirect emissions associated with the production, marketing and distribution of the fertilizer. Tom aims to reduce nitrogen use by getting more value from slurry and producing more output per unit of nitrogen used.

➔ Improved manure management. Spreading in spring rather than summer and low emission application methods reduces ammonia (an indirect source of GHG) emissions. These strategies also increase the fertilizer replace-

ment value of slurry and reduce fertilizer N requirements. Tom already spreads most of his slurry in spring so only a small improvement is possible.

An important output of the carbon navigator is a summary of total reduction in carbon footprint possible on the farm and the impact this has on farm profitability. Figure 1 shows that the targets set for Tom Halpin's farm can potentially reduce the carbon footprint of beef produced on this farm by 10% and also increase profitability by €10,500.

Although these values depend on market and farm circumstances, it clearly indicates the level of progress possible. Speak to your local Teagasc adviser about using the carbon navigator for your own farm.

# Reducing costs and maximising

**T**hroughout the BETTER farm programme, much emphasis has been placed on prolonging the grazing season, reducing feed costs and increasing animal performance as a means of increasing output and profitability.

Measuring grass growth has been one of the key components of this process, with growth rates published each week in the *Irish Farmers Journal*.

Since joining the BETTER farm programme, one of Tom's first tasks was to increase the number of paddocks on the farm.

Tom now has 21 paddocks, with six per grazing group, ranging in size from 0.82ha to 1.76ha.

The aim is to graze out the paddocks in three days and allow 18 to 21 days for regrowth.

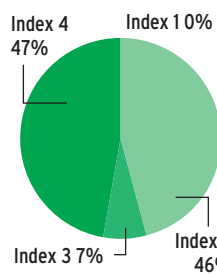
Grass budgeting using the grass wedge is key to maintaining a highly digestible grass sward at all stages during the grazing season in order to optimise animal performance. Tom aims to increase the utilisation of grass by maintaining pre-grazing heights of 8cm to 10cm (1,300kg DM/ha to 1,700kg DM/ha) and graze paddocks down to 4cm to 4.5cm.

By measuring grass growth on each paddock during the growing season, Tom can assess and rank each individual paddock's growth performance during the year.

This will help to identify poor-performing paddocks that may

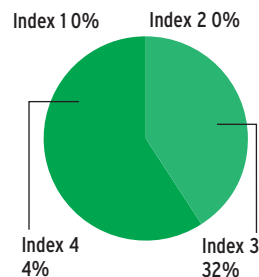
**Figure 1**

P index of farm



**Figure 2**

K index of farm



need reseeded. As the farm is very dry and free-draining, Tom is focussing on turning cattle out to grass earlier in spring to help to prolong his grazing season and help to reduce the expensive indoor winter period.

However, in order to avail of early spring grass, Tom is closing his paddocks in rotation from mid-October.

The maintenance and improvement of soil fertility is important to maximise grass growth.

On good mineral soils, a soil pH of 6.3 and soil phosphorus (P) and potassium (K) at index 3 is required. Tom tested his soil in April 2012. Table 1 gives a breakdown of each paddock's soil fertility status.

Approximately 9% of the farm tested for optimal pH, P and K. Soil pH on the farm ranges from 5.25 to 6.32. Table 2 outlines the ranges of soil pH readings on the farm.

# growth rates

As can be seen, 7% of the farm tested for soil pH below 5.5, 31% of the farm tested between pH 5.5 and 5.9, 52% of the farm tested between pH 5.9 and 6.2 and 9% of the farm tested pH 6.2 and 6.5.

The pH status of the soil has a significant influence on the availability and uptake of nutrients.

Grassland soils maintained at pH 6.3 to 6.5 will release approximately 60kg to 80kg/ha more nitrogen per year than soils with pH 5.0.

This represents a potential cost saving of €60 to €80/ha.

Phosphorus is an important element for crop establishment and root development. It also plays an important role in the nutrition of livestock.

Soils at P index 1 will produce approximately 1.5t/ha less grass dry matter compared to soils at index 3.

As can be seen from Figure 1, 47% of the farm is index 4 and 7% is categorised as index 3 for P. Most of this land is on the main grazing block and the soils with lower P indexes are mainly silage fields.

Potassium plays a key role in increasing stem strength, improving drought resistance and cold tolerance. Most importantly, it influences yield.

Soil K levels are excellent with 59% of the soils index 4 and the remaining 41% of soils testing index 3.

**Table 1: 2013 Grassland soil sample results**

Paddock	Area (ha)	Soil pH	P Index	K Index
1a	0.93	6.32	4	3
1b	0.97	6.32	4	3
1c	1.01	6.32	4	3
1d	0.82	6.32	4	3
1e	0.85	6.32	4	3
1f	1.00	6.32	4	3
2a	0.82	6.12	4	4
2b	0.82	6.12	4	4
2c	0.83	6.12	4	4
2d	0.86	6.12	4	4
3a	1.40	5.94	4	4
3b	1.76	5.94	4	4
3c	1.61	5.94	4	4
3d	1.47	5.94	4	4
3e	1.08	5.94	4	4
3f	0.95	5.94	4	4
4a	1.37	5.56	2	3
4b	0.99	5.56	2	3
4c	1.59	5.56	2	3
4d	1.08	5.56	2	3
4e	1.33	5.56	2	3
5	6.06	6.05	3	4
6	0.94	6.05	3	4
7	7.75	5.92	2	3
8	6.66	5.74	2	4
9	4.24	5.25	3	4
10	6.00	5.84	4	4
11	5.42	6.19	4	3

**Table 2: Range in soil pH on farm**

Soil pH range	% of the farm within range
<5.5	7%
5.5-5.9	31%
5.9-6.2	52%
6.2-6.5	9%
>6.5	0%

# Breeding management

**T**here is regular debate over the ideal suckler cow or breed of the cow. However, regardless of breed type, a functional suckler cow should have the following characteristics;

- ☛ Longevity.
- ☛ Fertility – calving every 365 days.
- ☛ Milk.
- ☛ Calving at 24 months.
- ☛ Good temperament.
- ☛ Calving ease and calf quality.
- ☛ Easily fed.
- ☛ Good conformation.

Tom has been breeding his own replacements from within his herd since he started suckling.

When selecting suitable replacement heifers, Tom is conscious to select daughters from cows with good milk yields, fertility, docility and conformation.

Fertility is excellent, with 36% of the herd calved under 365 days and 46% calved between 366 and 390 days over the 2013-14 breeding season.

By using the Herd Plus cow report from ICBF and reviewing calf performance from weight recording, Tom has accurate farm data to use when selecting suitable cows to breed replacements from.

Cows are mostly bred from Simmental and Charolais sires that have good maternal traits. Tom recently had a Simmental bull sired by Raceview King and a Charolais bull by Organdi.



Last year, Tom purchased a Limousin bull, sired by Ronick Hawk, with good maternal traits as he has a five-star rating for milk and daughter fertility. Tom uses genetic indexes as a key support tool when selecting breeding bulls and herd replacements.

## BREEDING PERFORMANCE

A key goal in running an efficient suckler system is good breeding management and herd fertility.

The bull is with the summer calving cows from 1 September and removed on 1 November. The spring cows are served from 1 May to 1 July. In addition to a short breeding season, Tom maintains it is important to have the cows in the correct energy balance, whereby they are at the correct body condition score and on a rising plane of nutrition prior to breeding.

On beef farms, output is measured as kilogrammes of liveweight produced per hectare. Animal fertility, mortality rate,



**Table 1:** Three year calving performance statistics

	2013-2014	2012-2013	2011-2012	Current national averages
Total no. of calvings	85	81	78	
No. of cows	69	68	62	
No. of heifers	16	13	16	
Calving interval	393	371	366	395
Mortality at birth %	0	1.2	2.6	4.7
Mortality at 28 days %	0	1.2	2.6	6.1
Females not calved in period %	2	4	3	10
Calves per cow per year	0.92	0.93	0.95	0.83
Births with known sire %	100	100	100	61
Births with difficult calving %	0	1.2	-	3.9

growth rate and stocking rate are all significant factors affecting farm output.

As can be seen from Table 1, Tom's mortality rate at calving and 28 days post-calving are well below the national average. Hence, he is producing over 0.90 calves per cow per year.

By having a focussed, compact calving period, selecting bulls with low calving difficulty, feeding cows the correct pre-calving diet, having them at the correct body condition score, good herd health and supervision are key manage-

ment tasks in attaining this high performance.

Tom is focussed on fertility within the herd and his calving interval was traditionally running close to 365 days.

However, after the wet year in 2012, eight summer calving cows were carried over into the spring herd and therefore Tom's calving interval has increased to 393 days.

As Tom was building numbers to increase his stocking rate by breeding from within the herd, he was forced to keep these cows in the system.



## Performance

**A**s can be seen from Tables 1 to 3, Tom is achieving excellent growth rates in his cattle. This can be attributed to:

- Good herd health and stockmanship as calves have very few setbacks from birth to selling time.
- Breeding cows with good maternal traits that are able to produce heavy weanlings. As milk is the driver of calf weaning weight, Tom is very conscious of maintaining milky cows within his herd.
- Using animals with good ge-

netic merit and growth rate traits.

- Cross breeding has been shown to increase growth rates when two to three different breeds are used.
- Good grassland management is essential in order to provide high digestible grass to cows and calves at all times during the year.
- Tom aims to start turning stock out to grass from mid-February in order to prolong his grazing season.

**Table 1: 2014 spring born bull and heifer calves**

	Bulls	Heifers
Average DOB	3/4/2014	2/4/2014
Weight (kg) 26/6/2014	179	181
ADG from birth (kg/day)	1.59	1.65

**Table 2: 2013 summer-born bull and heifers**

Weigh date	D.O.B.	Av. Weight (kg)	ADG from birth (kg/day)	ADG from last weighing (kg/day)
Bulls	14/7/14			
21/2/2014		280	1.06	
25/6/2014		450	1.17	1.37
Heifers	24/7/14			
21/2/2014 (Turn-out)		246	0.97	
25/6/2014		360	0.92	0.92

**Table 3: 2013 spring-born bull and heifers**

Weigh date	D.O.B.	Av. Weight (kg)	ADG from birth (kg/day)	ADG from last weighing (kg/day)
Bulls	29/3/13			
11/10/2013 (weaned)		360	1.61	
22/11/2013 (sold)		413	1.55	1.33
Heifers	2/4/13			
11/10/2013 (weaned)		286	1.28	
21/2/2013 (Turn-out)		365	1.00	0.4
25/6/2014		477	0.97	0.92

## Herd health

Herd health plays a key role in optimising the output and profitability of a suckler beef farm. The effects of poor herd health management on beef farms are manifested through animal mortality, ill-thrift, cost of treatment, cost of prevention and additional labour.

Farmers planning on increasing the output on their farms must ensure herd health management is adequate, as increasing stocking rate, improving grassland management skills and animal genetics will be pointless if herd health breaks down.

It is important to minimise their exposure to, and maximise their defence against, disease. Through good stockmanship and herd health management, Tom has been able to keep mortality and veterinary costs under control.

### COLOSTRUM

Tom ensures that each calf receives sufficient colostrum within two hours after calving.

Colostrum not only provides food but also maternal antibodies to protect the young calf against the common infections that it may encounter in early life.

Tom tries to avoid bringing colostrum in from an outside source and has built up a bank of frozen colostrum from his cows.

### HYGIENE

Hygiene is an important factor in minimising an animal's exposure to disease. Tom is a firm believer in providing a clean, dry lying

area with no draughts and good ventilation for his cattle.

Tom puts a lot of emphasis on having a clean environment for the cow and calf post-calving and isolating them for four to five days to develop a strong cow-calf bond. The summer-calving cows are calved outdoors, reducing the risk of infections that may build up in the housing facilities.

### PARASITES

Tom now takes representative faecal samples from the different groups of stock. The results are used as a tool to help decide when to dose for fluke and worms.

Faecal samples are taken shortly after housing in the winter to determine liver and rumen fluke burdens. Calves and weanlings are sampled during the grazing season to assess gastrointestinal parasites.

### VACCINATION

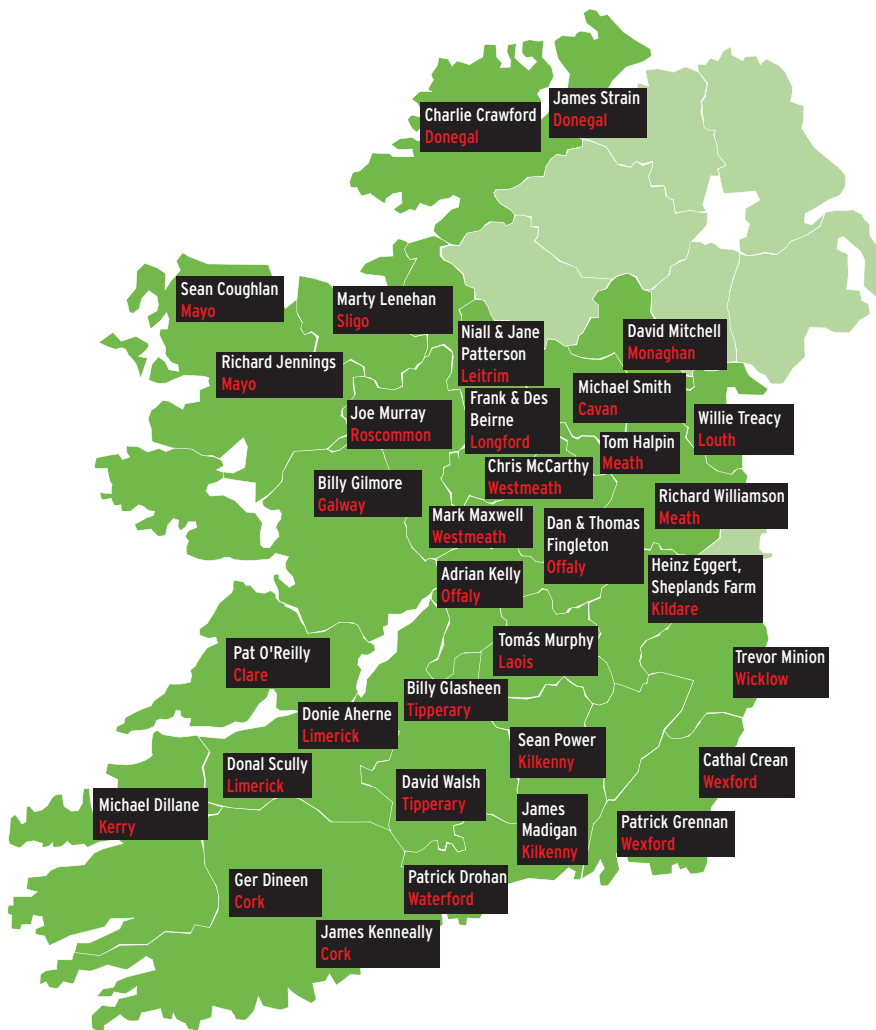
Tom vaccinates his cows against Leptospirosis before the breeding season commences to help reduce the risk of a fertility issue within the herd. The calves are vaccinated against clostridial diseases using a 10-in-1 vaccine.





Business, Environment Technology through  
Training Extension Research

# PHASE 2 PARTICIPANTS



Published by the Irish Farmers Journal. Printed by Johnswood Press (info@johnswoodpress.ie)