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## PHASE 2 - FARM WALK

11 March 2014  
Trevor Minion,  
Ballintесkin,  
Wicklow town,  
Co Wicklow



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.

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**O**n behalf of Teagasc and the management team of the Teagasc/*Irish Farmers Journal* **BETTER** Farm beef programme, I would like to welcome you to today's event on Trevor Minion's farm. This is the second in a series of 10 open days taking place in 2014 on farms participating in the programme. I would like to acknowledge the support of our sponsors and, in particular, the *Irish Farmers Journal* who have been instrumental to the programme's success over the past five years.

We hope that you will find today's walk both informative and practical and hope that you can take home some messages from this farm to improve the profitability of your own farm.

Increasing output has been a major focus of the farm plan and is very important in a drystock system. Achieving this output

cheaply is equally important and Trevor has paid extra attention to correct grassland management during the year to ensure a long grazing season and maintaining quality swards for grazing.

This farm is the only farm in the programme operating a dairy calf-to-beef enterprise. Trevor has worked this system well which has increased the stocking rate and, in turn, gross margin. Both Trevor and his son Andrew have been very open to taking on new ideas and advice and we commend them for this, and thank their family for opening up their farm today. With Trevor's management ability and commitment, we have no doubt that he will continue to push his business in the future and we look forward to helping him on this journey.

**Adam Woods,**  
**BETTER Farm beef**  
**programme manager**

### PHYSICAL SYSTEM

Measure	Baseline 2011	Target 2015
System	Suckler / calf-to-beef	Suckler / calf-to-beef
Stocking rate (LU/Ha)	1.69	2.4
Land base (adj. Ha)	36.7	40

### PURCHASES

Purchases	Dairy calves and replacements	Dairy calves and replacements
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### PHYSICAL OUTPUT

Liveweight output (kg/Ha)	644	987
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### FINANCIAL SYSTEM

Output value (€/Ha)	1,211	2,012
Variable costs (% of output)	€766 (37%)	€905 (45%)
Gross margin (€/Ha)	445	1,107



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## Increasing stock and farm output

**T**revor Minion is married to Allyson and they have two children, Heather and Andrew. Trevor joined the BETTER Farm beef programme in 2012 and is the only programme participant operating a dairy calf-to-beef enterprise alongside his spring calving suckler cow herd.

The farm is located about 3km from Wicklow town and about 4km from the east coast. The farm is between 134ft and 270ft above sea level. In total, the farm extends to 54 hectares (Ha), all of which is owned and is divided in half by a main public road.

Trevor grows approximately 17Ha of spring barley annually, which supplies the bulk of his concentrates for finishing cattle. The remaining 37Ha is in grass and is divided into paddocks.

The farm is currently in REPS4 and Trevor is an active member of the Garden County Beef Discussion Group, facilitated by his local Teagasc adviser Martin Doyle.

The suckler herd has increased from 23 cows in 2012 to 31 cows currently. It consists of Limousin-cross cows that calve between February and April.

In 2013, Trevor had 28 calvings of which seven were maiden heifers that calved at two years of age.

Calving interval is currently running at 366 days. This is largely due to having cows at the correct body condition score at mating and consuming high qual-

ity grass. The aim is to increase the herd to 40 cows.

In previous years, some replacement heifers were bred within the herd, however, in order for Trevor to increase cow numbers, he will now have to source suitable breeding stock from outside the herd.

All animals are brought through to finish. The male cattle are castrated while still suckling the dam, between six and eight months of age and are finished as steers at 24 to 26 months of age. Heifers are finished between 22 and 24 months of age.

Trevor purchases dairy calves which are mostly Friesian bulls from a local dairy farm from October to December. They are castrated between six and eight months and are subsequently finished as steers under 30 months of age.

Traditionally, Trevor was buying 15 calves annually. In 2014, numbers increased to 20 calves. Increasing numbers will improve farm output and stocking rate at grass, which in turn will help with grass utilisation.

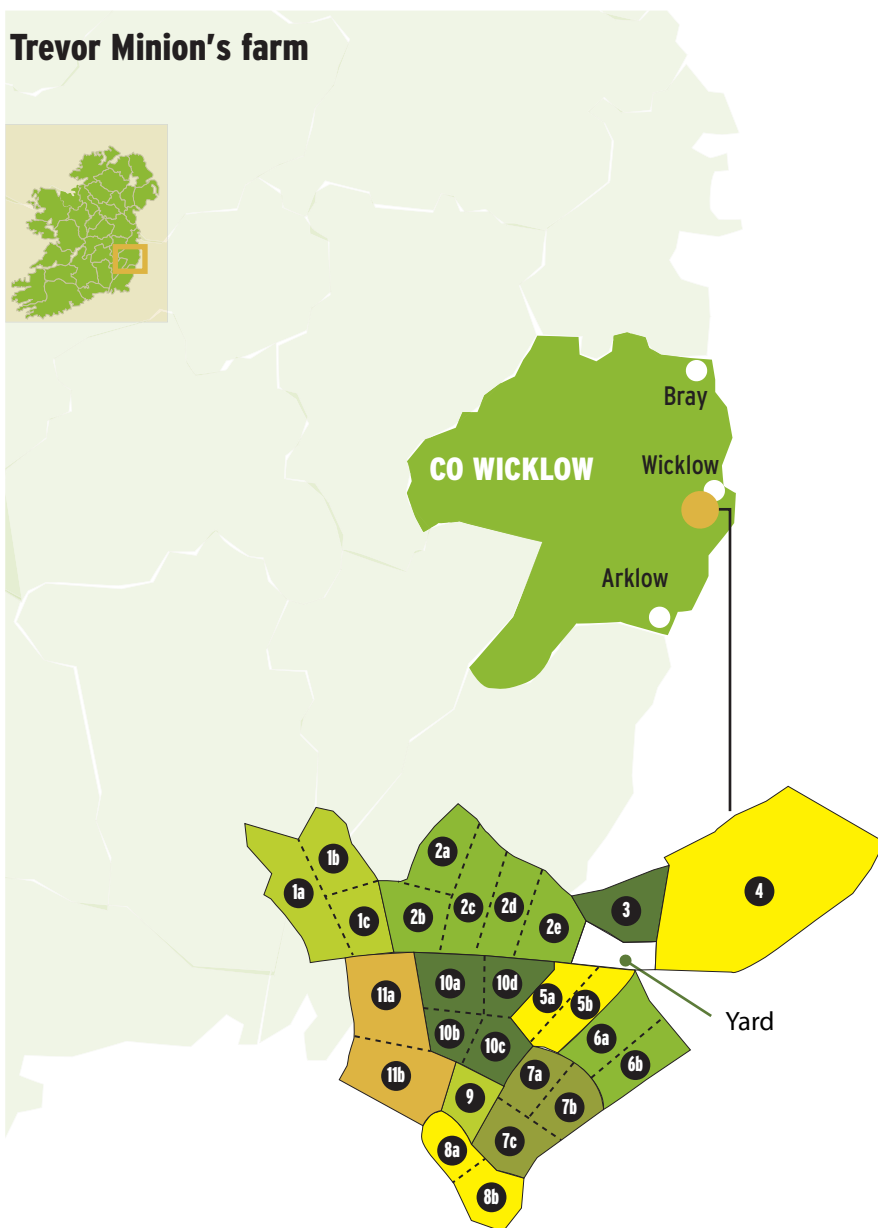
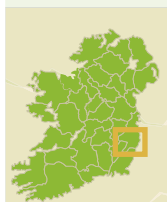
This increase in output in combination with improved technical efficiency should improve the farm's gross margin. The main aim of the farm plan is to increase output on the farm while controlling costs of production. This is being done by focusing on a grass-based system.

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Increasing numbers will improve farm output and stocking rate at grass which in turn will help with grass utilisation.



# Trevor Minion's farm







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# Keeping costs in check

**T**revor's profit monitor results have shown a steady increase in output value (Table 2). The farm has increased its stocking rate by 18% since 2011. While liveweight output has increased by 11% since 2011, the value of Trevor's output has increased by 28% since 2011. The reason for the increase in output value in the past 24 months has been an increase in finished cattle prices, combined with more stock killed off the farm.

By increasing liveweight output (cattle killed off the farm), a gross output value of €2,012/Ha is a realistic target that needs to be hit in order to achieve a gross margin of €1,000/Ha (Table 1).

In 2013, the gross margin was €674/Ha. This represents a 52% increase since 2011 and is due to increased output while keeping variable costs under control.

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There was a reserve of silage built up on the farm and therefore Trevor wasn't affected by the fodder shortage in the spring

Fortunately, Trevor's variable costs didn't increase drastically in 2013. This is partially due to the fact that there was a reserve of silage and, therefore, Trevor wasn't affected by the fodder shortage.

Feed costs were actually lower in 2013 than 2012. However, similar to most programme farmers, fertilizer costs increased from €150/Ha in 2012 to €200/Ha in 2013.

This is largely due to the delayed spring as extra fertilizer was applied to kick-start growth for the second rotation. Also, grass growth struggled from July to September due to drought.

Again, fertilizer was applied to help boost growth. In addition, more expensive compound fertilizers were applied to help build P and K levels in some fields. In all, variable costs only increased by 7% in 2013 despite the weather-related difficulties.

**Table 1: Target performance by end of 2015**

	2012	2013	2015 (target)
Stocking rate LU/Ha	1.81	2.0	2.4
Output kg/ha	731	714	987
Output €/ha	€1,448	€1,552	€2,012
Gross margin €/ha	€631	€674	€1,107

**Table 2: Profit monitor yearly comparison**

Year	Area farmed (ha)	Stocking rate LU/ha	Lwt output kg/ha	Value of output €/ha	
2011	36.7	1.69	644	1,212	
2012	36.3	1.81	731	1,448	
2013	36.3	2.00	714	1,552	

**Table 3:** Example of financial beef budget for autumn born Holstein/Friesian steers finished at 28 months of age

Variable	Per head
Purchase price	€100
Calf rearing (including mortality)	€110
Concentrates @ €270/t	€278
Silage @ €28/t fresh weight	€180
Grazed grass @ €0.07/kg DM	€270
Vet, dosing, transport and levies	€65
Total variable costs €/head	€1,005
Beef price €/kg	€3.80
<b>Sale price</b>	<b>€1,406</b>
<b>Gross margin per head</b>	<b>€401</b>
<b>Sensitivity analysis</b>	
Beef price -10%	-€140
Concentrate price +10%	-€26

## Dairy calf-to-beef budget

The dairy calf-to-beef enterprise provides the farm with an alternative option to lift output. It complements the system as calves are reared in the winter months when workload is generally lower.

Doing so also means calves make maximum use of a long grazing season and liveweight gain from grass. After year one, Friesian steers are managed in the same manner as suckler progeny.

At present, finishing steers are fed first-cut top-quality silage (78

DMD) and 5kg to 6kg concentrate. They have averaged approximately 1kg per head per day since winter housing. Store cattle have averaged 0.6kg per head per day on first cut silage and 1kg of concentrates.

A sample budget is shown in Table 3 for autumn born Holstein/Friesian steers finished at 28 months of age.

As can be quickly seen, the economics are influenced by achieving high levels of efficiency, beef price and concentrate price. The price sensitivity shows that, for every 10% change in beef price, the value of a 370kg carcass will change by €140 per head.

	Feed €/ha	Fert/lime €/ha	Vet €/ha	Contractor €/ha	Other €/ha	Gross margin €/ha
	287	181	45	143	105	445
	376	150	46	130	113	631
	321	200	53	140	161	674



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# Better utilisation

Over the last two years, the number of paddocks on the farm increased from 11 to 21, allowing six or seven paddocks per grazing group post-silage cutting.

The aim is to graze each paddock for three days and allow 18 to 21 days for re-growth. Trevor and his son Andrew have been measuring grass growth using a platometer on a weekly basis for the last two years and this forms the basis for any management decisions.

Once Trevor can establish his number of grazing days ahead, he can make decisions and decide if he needs to take out surplus grass as baled silage or spread extra

Andrew Minion, Martin Doyle, Teagasc B&T adviser, and Trevor Minion.

fertilizer if he can identify a potential deficit.

Grass budgeting is key to maintaining a high-quality grass sward at all stages during the grazing season. It helps maintain pre-grazing heights of 8cm to 10cm.

The farm has been using the new Teagasc online grass measurement programme Pasture Base Ireland as its grass measuring tool since the beginning of 2013.

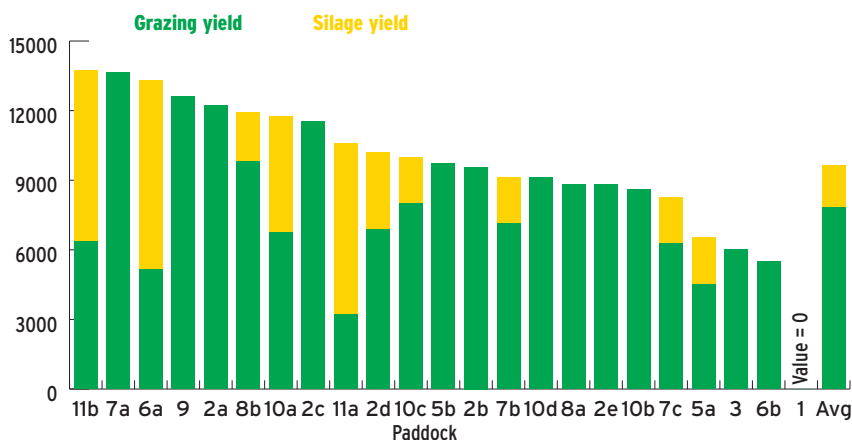
The programme has shown that the farm grew a total of 9.4t dry matter (DM) per Ha during the year. This can be apportioned to 7.6t DM per Ha for grazed grass and 1.8t DM per Ha for silage.

This was calculated by Trevor



**Figure 1**

Cumulative paddock yield to 06/12/2013



measuring grass growth every week.

On average, including silage ground, six grazings were achieved from paddocks last year.

Figure 1 illustrates total grass grown in each paddock during 2013, ranking them from the most productive to the least productive paddock.

This information helps with

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Grass budgeting is key to maintaining a high quality grass sward at all stages during the grazing season.

management decisions as it assists Trevor in identifying poor performing paddocks that may need reseeding or perhaps soil fertility issues that are limiting grass growth.

Overall, the farm is relatively dry. Some of the low-lying land below the road is heavier in areas and was drained 20 to 30 years ago.

Some of this land suffered badly in the wet year of 2012.

The main emphasis on this farm is to maximise the proportion of highly digestible grazed grass into the animal's annual feed budget.

Therefore, it is essential that Trevor closes paddocks in rotation in the autumn to ensure that he can avail of early turnout in the spring to prolong his grazing season and shorten the expensive winter indoor feeding period.



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# Planning for success

It is well known that spring grazing management has a large influence on the overall annual productivity of a grass sward. The spring rotation planner is an easy-to-use management tool to remove the guesswork from decision-making during this period.

By using the planner, it allocates a proportion of the farm each day to the herd from turnout to grass in spring up to magic day (where growth rate equals herd demand), thereby rationing grass supply in spring until growth exceeds demand.

Using the planner in conjunction with walking the farm weekly and taking grass measurements will ensure that the first rotation finishes on the correct date and the herd does not run out of grass at critical times of the year.

Trevor completes a simple spring rotation planner each year to aid in grassland management. As turnout date is dictated by grass supply and ground conditions, the farm turnout date varies slightly from year to year.

Table 3 shows when Trevor closed each paddock, closing cover on the farm (4 December) and a measurement taken in early February to assess how much grass is on the farm for turnout.

This year, given the wet start, it is estimated that the turnout date on this farm will be slightly later than

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The Spring Rotation Planner is an easy to use management tool to remove the guesswork from decision making

**Table 1: Spring rotation targets**

Total area to be grazed	37Ha
Graze ~40% by March 17th	15Ha
Graze 100% by April 5th	37Ha

anticipated at around 1 March.

With magic day estimated at around 5 April, this leaves approximately five weeks until the second rotation has to begin (Table 2).

Therefore, Trevor must aim to graze roughly 20% of his farm weekly so as to hit his target of 100% grazed by 5 April. Remember, when completing your own planner to include silage ground if you are grazing it.

**LEFT: Programme adviser Peter Lawrence**



**Table 2: Spring rotation planner worksheet**

Week of	Weekly %	Weekly hectares	Actual grazed
1 March - 8 March	20%	7.4	
8 March - 15 March	20%	7.4	
Have 40% of farm grazed			
15 March - 22 March	20%	7.4	
22 March - 29 March	20%	7.4	
29 March - 5 April	20%	7.4	
Have 100% of farm grazed			

**Table 3: Paddock closing dates, closing covers and spring farm cover**

Paddock	Closing date	4-12-2013 cover		4-2-2014 cover	
		Kg DM/Ha	cm	Kg DM/Ha	cm
*1	26 Oct	625	6.5	750	7
2a	26 Oct	800	7.2	1,000	8
2b	20 Oct	1,000	8	1,150	8.6
2c	27 Oct	725	6.9	750	7
2d	28 Oct	475	5.9	850	7.4
2e	30 Oct	925	7.7	725	6.9
3	11 Oct	450	5.8	750	7
5a	27 Oct	600	6.4	625	6.5
5b	13 Oct	375	5.5	525	6.1
6a	28 Oct	500	6	675	6.7
6b	24 Oct	500	6	675	6.7
7a	2nd Oct	450	5.8	400	5.6
7b	18 Oct	325	5.3	275	5.1
7c	16 Oct	650	6.6	750	7
8a	3rd Nov	650	6.6	675	6.7
8b	24 Oct	925	7.7	925	7.7
9	23rd Oct	625	6.5	675	6.7
10a	25 Oct	900	7.6	875	7.5
10b	22nd Oct	825	7.3	625	6.5
10c	24 Oct	450	5.8	500	6
10d	4 Oct	800	7.2	875	7.5
11a	11 Oct	550	6.2	675	6.7
11b	18 Oct	625	6.5	625	6.5



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All grassland was soil tested in 2013. Table 1 gives a breakdown of each paddock's soil fertility status. Soil pH on the farm is in good order and ranges from pH 6.66 to 5.99 and therefore very little lime is required.

The pH status of the soil has a significant influence on the availability and uptake of both soil nutrients and applied nutrients in the form of either artificial fertilizers or organic manures by

the plant. It will be important for Trevor to monitor and maintain these pH levels of his soils as grassland soils maintained at pH 6.3 to 6.5 will release approximately 60kg to 80kg/Ha more N per year than soils with pH 5.0. This represents a potential cost saving between €60 to €80/Ha.

As can be seen in Figure 1, approximately 49% of the farm is under the target phosphorus (P) index 3. Phosphorus is very important for crop establishment

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

Paddocks	Area (Ha)	pH	P index	K index
1A, 1B, 1C	5.81	6.66	3	4
2A, 2B, 2C, 2D	7.95	6.26	2	4
2E, 3	2.89	6.53	4	4
6A, 6B	3.57	6.09	3	2
7A, 7B	2.39	6.15	1	2
7C	2.07	6.59	2	2
9	1.22	5.99	3	3
10A, 10B, 10C, 10D	5.38	6.25	4	4
11A, 11B	5.73	6.37	2	3

**Table 2: Fertilizer usage in 2013**

Fertilizer	Quantity (t)	Units N	Units P
Urea	3	2,760	0
18-6-12	2	720	240
24-2-5	4	1,920	160
24-2.2-4.5	1	480	44
CAN	9.73	5,254	0
10-10-20	2	400	400

and root development/growth and plays an important role in the nutrition of livestock.

Soils in P index 1 will produce approximately 1.5t/Ha less of grass dry matter compared with soils maintained at the target soil index 3. Early spring growth in grass swards is particularly affected by low soil P levels.

The focus in 2014 will be to maintain the higher P index soils (index 3 and 4) and increase the lower index soils (index 1 and 2) by targeting these with slurry and compound fertilizer applications.

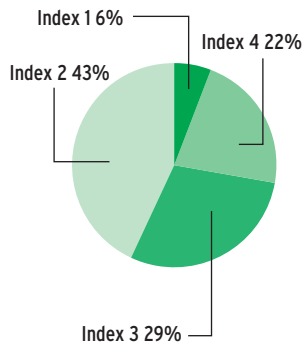
Soil potassium (K) levels are quite good with only 22% of the farm below index 3. Trevor can target the index 2 soils with compound fertilizers and slurry to help increase their K status.

### Fertilizer usage

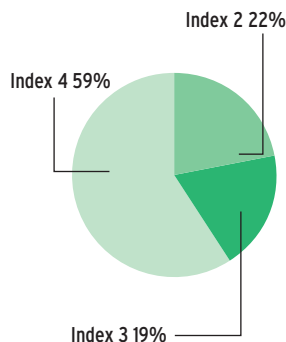
As the farm is still in REPS 4, Trevor is limited to how much fertilizer nitrogen (N) and phosphorus (P) can be spread on the grassland after accounting for what the tillage crops require.

In 2013, Trevor spread a total of 11,534 units of N (156kg/Ha) and 844 units of P (11kg/Ha) on his grassland. See Table 2 for Trevor's grassland fertilizer usage.

**Figure 1**  
P index of farm



**Figure 2**  
K index of farm







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## Five tips for BETTER silage

### 1. Plan

- ➔ Decide on fields to harvest
- ➔ The amount and timing of fertilizer and slurry to be spread
  - ➔ The approximate harvest date
  - ➔ Contractor to avoid delays in harvesting
- ➔ Prepare silos and effluent tanks in advance

### 2. Target high yields

- ➔ Harvesting large yields of grass dilutes production costs
- ➔ Soil tests should be carried out to determine optimal rates of P, K and lime to be applied
- ➔ Timely removal of livestock will allow permitted N application to promote high yields

### 3. Graze tight

- ➔ Graze off to remove dead herbage in spring
- ➔ Graze to 4cm to 5cm prior to applying fertilizer/slurry
  - ➔ Harvest at appropriate growth stage

### 4. Work fast

- ➔ Fast filling and perfect sealing from air are essential for good preservation
  - ➔ Harvesting a clean, dry crop enhances preservation

### 5. Minimise exposure to air

- ➔ Careful management of silo/bales and feed trough during feedout
  - ➔ Remove silage at a reasonably fast rate from feed face
  - ➔ Ensure that feed face is kept even and clean

Characteristics of good quality silage

Variable	Ranges
Dry matter	20% +
pH	3.8 to 4.2
DMD	70% +
Crude Protein	12 to 16%
Ammonia	<10%
Ash	<10%

DMD\* ranges of different forages

Forage type	DMD ranges
Grazed grass	72% to 82%
Leafy silage	74% to 76%
Stemmy silage	60% to 65%
Hay	55% to 60%
Straw	45% to 50%

\*Dry matter digestibility

## Five steps to BETTER soil fertility

### 1. Soil testing

- ⇒ Provides vital information about your soils
- ⇒ Is a foundation for your fertilizer plan
- ⇒ A standard test will give fertility status on pH, lime requirement, P and K

### 2. Soil pH and lime

- ⇒ Lime improves the availability of N, P, K, sulphur, calcium and magnesium
  - ⇒ Lime at least every five years
- ⇒ Ground limestone can be spread at any time
  - ⇒ Apply lime as per soil test report

### 3. Target Index 3 for P and K

- ⇒ Index 3 is optimum for crop growth
- ⇒ Only a soil test will determine P and K status
- ⇒ Index 4 soils (high fertility) are a resource - use them to save money on fertilizer costs
  - ⇒ Index 1 & 2 (low fertility) need additional nutrients

### 4. Slurry and manures

- ⇒ Plan when and where slurry/manure will be best utilised
- ⇒ Aim to apply slurry in spring during moist, cool conditions

### 5. Nutrient balance

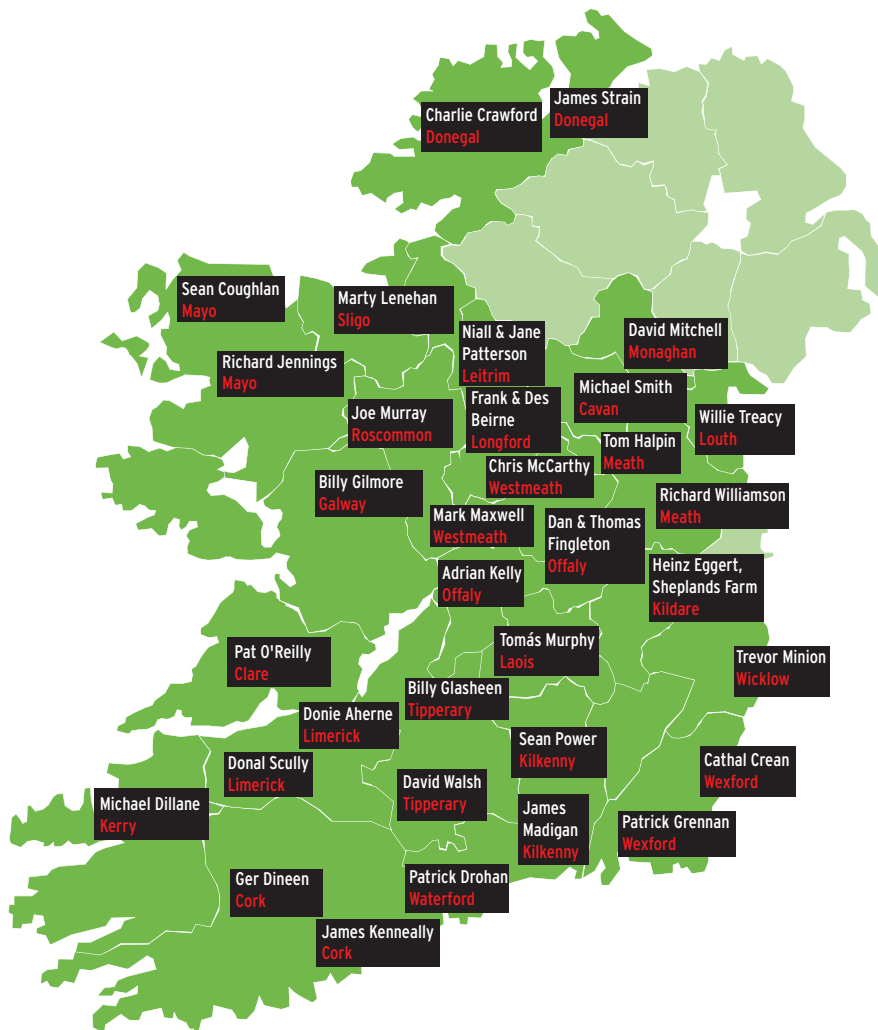
- ⇒ Develop a fertilizer plan for your farm
- ⇒ Get the best value from fertilizer and organic manure
  - ⇒ Enhance crop yield and animal performance
- ⇒ Reduce environmental risks due to field loss of excess nutrients

The P index system		
	Soil P ranges (mg/l)	
Soil P index	Grassland crops	Other crops
1	0.0 - 3.0	0.0 - 3.0
2	3.1 - 5.0	3.1 - 6.0
3	5.1 - 8.0	6.1 - 10.0
4	Above 8.0	Above 10.0

The K index system	
Soil K Index	Soil K ranges (mg/l)
1	0 - 50
2	51 - 100
3	101 - 150
4	Above 150



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