Soil Fertility Progress - Heavy Soils Programme Farms 2010-2014

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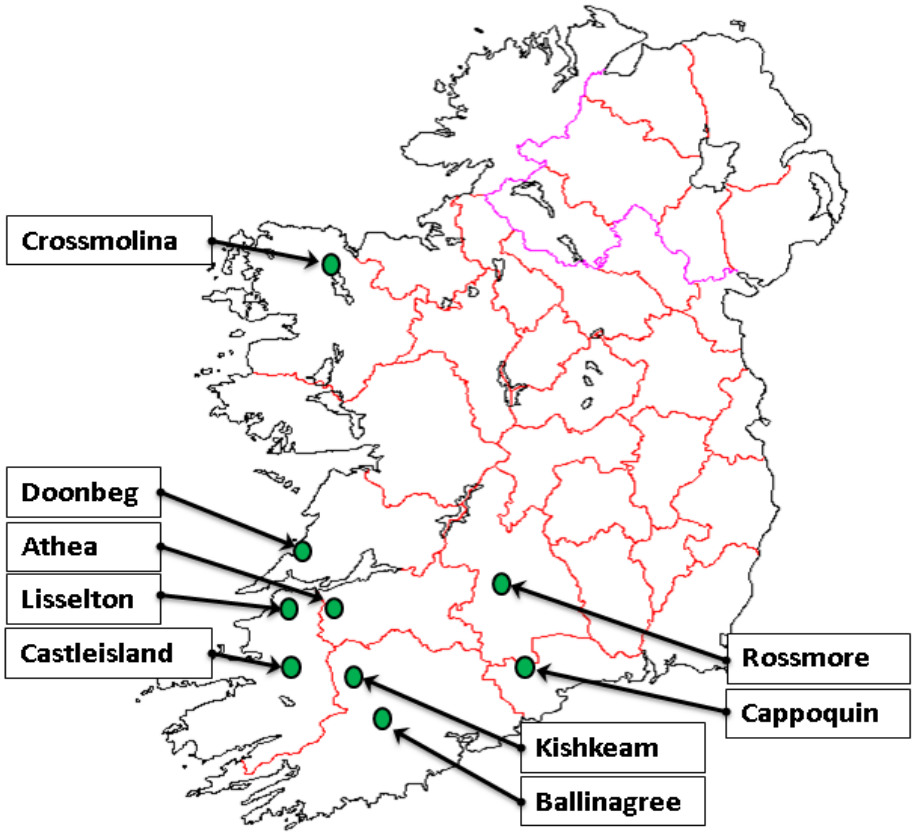
Heavy Soils Programme Farms

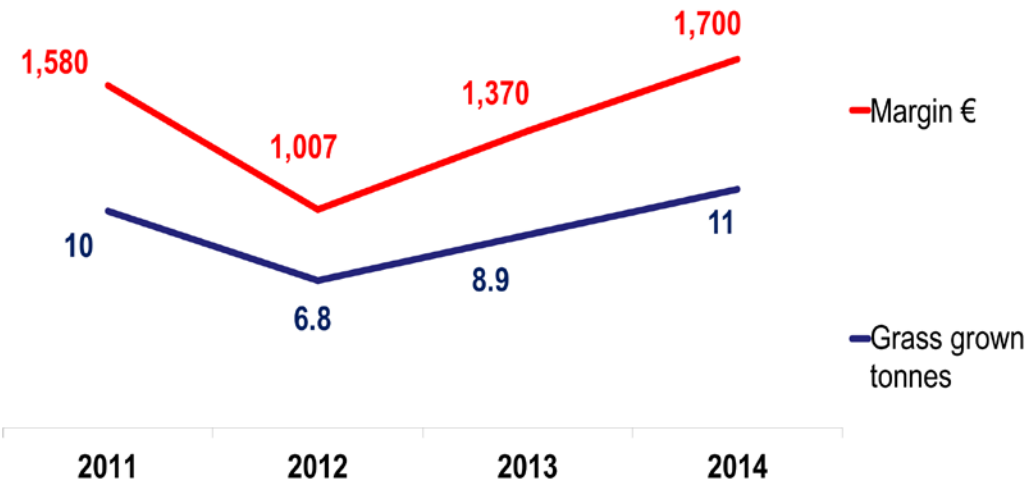


Heavy Soils Programme Farm Data 2011-2014

	Herd size	Stocking Rate (LU/Ha)	
		Farm	MP *
2011	82	1.69	2.25
2012	85	1.71	2.27
2013	86	1.68	2.31
2014	90	1.78	2.37

*** MP = Milking platform**

Farm Performance per Ha



Economic Value – Target Extra 2 Tonne/Ha Grass Grown per Farm

- ***1 tonne of grass utilised = €267/t DM/ha***
- **Economic value of growing extra 2 tonnes/Ha**
- **€400/ha/yr less "build up" cost of €100/ha/year**
- **Group Average Milking Block Area = 41.02ha * €300**
- **= €12,000**
  additional income per farm.

- Source: Teagasc Moorepark 2015

Baseline Soil Analysis 2010

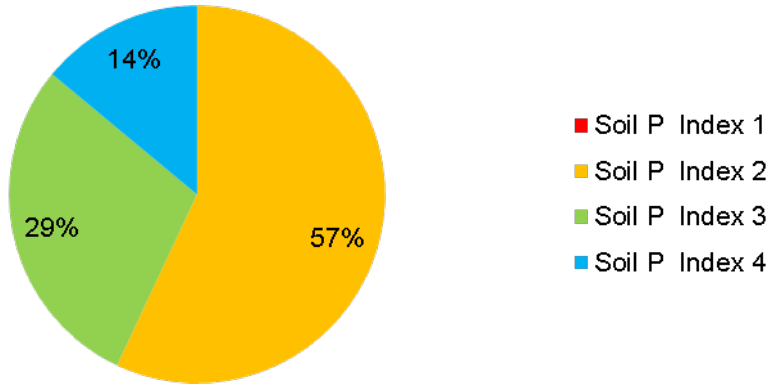
Heavy Soils

Table 2	PH	Phosphorus mg/l	Pottasium mg/l
Location	2010	2010	2010
Castleisland	5.8	6	174
Doonbeg	5.4	4.1	85
Athea	5.8	3	101
Kiskeam	5.4	3.8	106
Listowel	5.3	10.9	118
	5.54	5.56	116.8

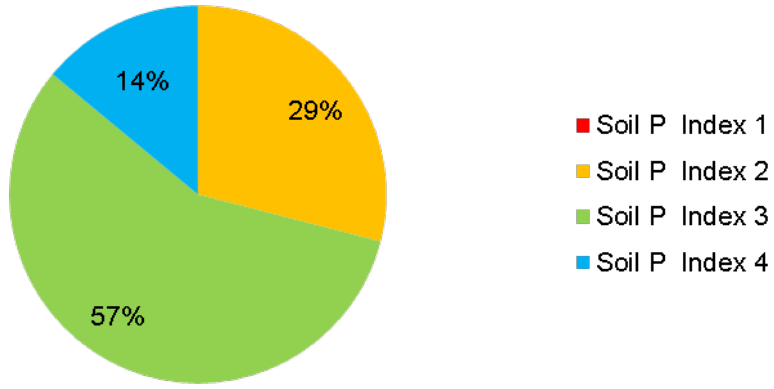
Soil Analysis – Overall P Status of Farms

Heavy Soils

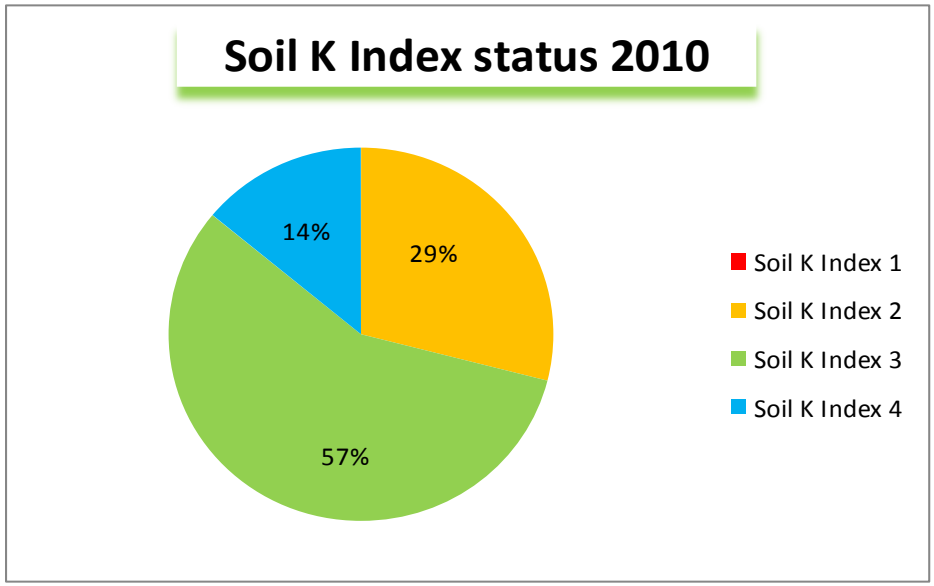
Soil P Index-Farm status 2010

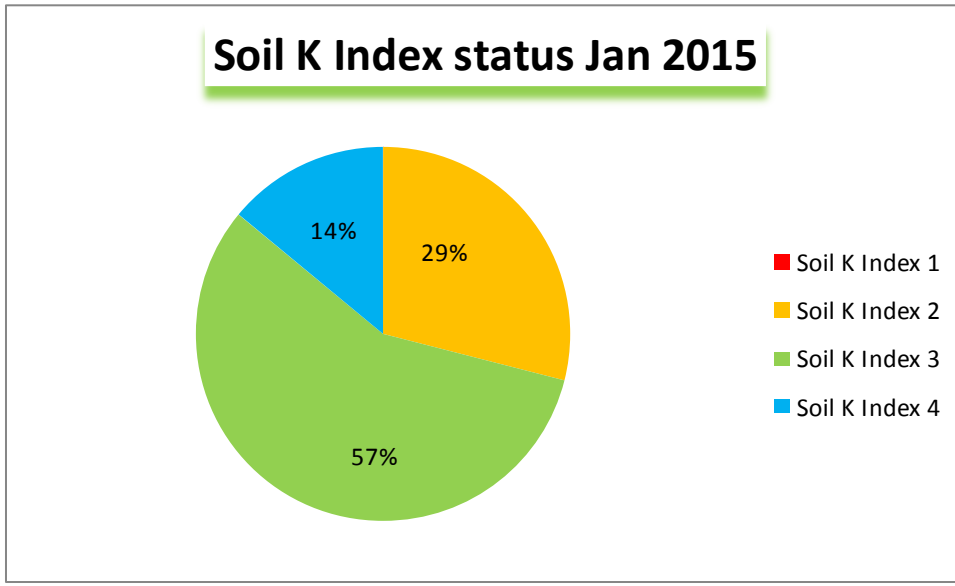


Soil P Index-Farm status Jan 15

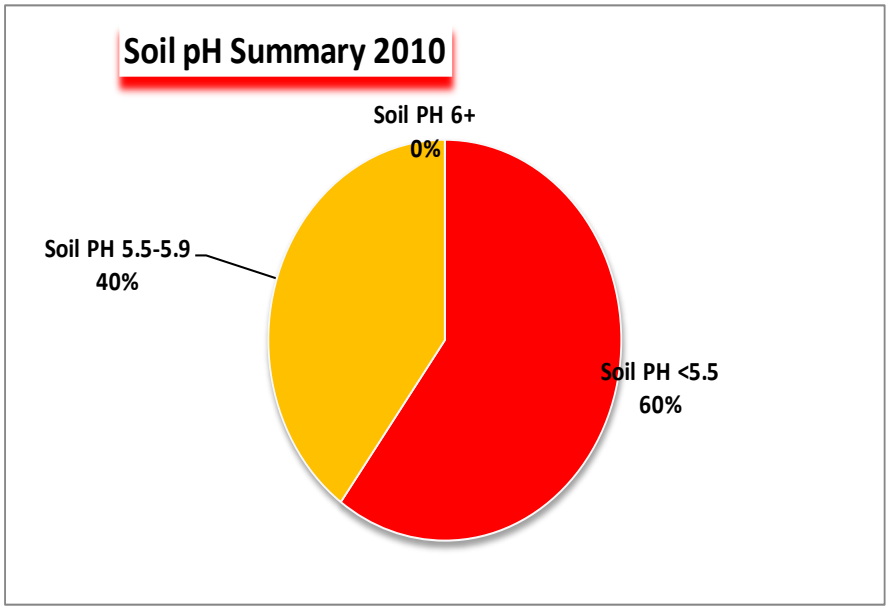


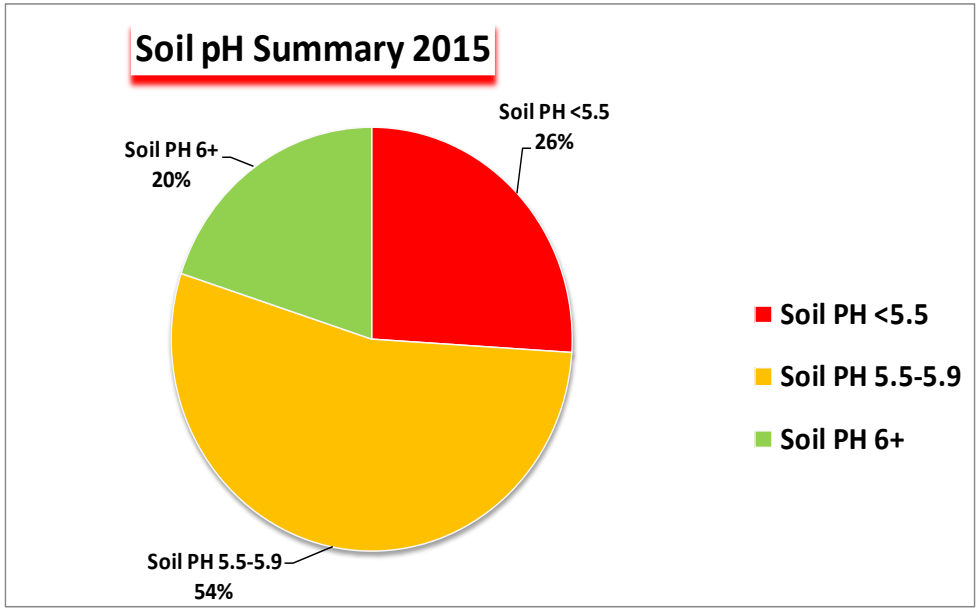
Soil Analysis – Overall K Status of Farms





Soil Analysis Overall pH Farm Status





2011-Why Baseline Fertility so Low?

- Limited use of compound fertilisers with knock on effect on K usage
- Rainfall exceeding 1500mm on many heavy soils farms accelerating losses of K and lime
- Continuing trend of low Lime usage especially on Heavy Soils Farms
- Clay soils with low PH contributing to high P fixation rates over time

Actions Undertaken on Farm

Heavy Soils

- **Soil Analysis & Farm fertiliser plan completed - Outlined P & K requirements.**
- **Lime Requirements for farm outlined in plan. – Aim to have all mineral soils at optimal pH level of >6.3 within 5 years.**
- **Established Total Lime required for farm eg 278 Tonnes. –**

-Set annual target for quantity & timing of applications

- **Organic P (slurry) targeted on low status fields –Total P applications (all sources) of 30kgs/Ha + on these areas**

- **Grass measuring on a weekly basis to establish impact over time**

What Changed?

- **New Nitrates Regulations came into force in 2014 allowing a higher chemical P allowance on low P index soils**

-Farm Chemical P limit increased by c 35%

However:

Increased chemical P usage having only limited impact on soil P test results on Low PH soils

Athea Paddock 19. 2014 (High Clay)

	Spring	Summer	Autumn	Total T/Ha
Grass growth Tonnes Dry matter/ha	0.4	3.6	2.0	6.0

	Soil Analysis	Artificial	Slurry	Total Kgs/ha
N		201	0	201
P	2.8	46	0	46
K	84	92	0	92
pH	4.80			

Ph Maintainance requirements

Unlocking the Groups Farm Nutrient Potential

Heavy Soils

- **Application of Lime to low pH Soils will release Nitrogen & Phosphorous (free of charge)**

pH 5.5 — **pH 6.3**

50% Lock up of Applied Nutrients — **100% Availability of Applied Nutrients**

Lime requirement-tonnes	Cost of Lime	Annual cost for 3 Year
	€	€
482	10122	3374
490	10290	3430
171	3591	1197
46.5	977	977
200	4200	1400
278	5836	2075

Average Farm Application 100 tonnes 2014/15 to date

Jan 2015 Soil Analysis Results

Soil Fertility Status Heavy Soils Programme Farms -Jan 2015						
Table 3	K - Morgan (Soil) - JC	K Index	P - Morgan (Soil) - JC	P Index	pH (Soil) - JC	LR t/ha (Soil) - JC
	117	3	6.4	3	5.7	8.9

Grass Growth 2015

Table 4	Heavy Soils Programme		Grass Growth Ytd to Oct 12 2015		
		Ytd Tonnes DM/Ha	Spring	Summer	Autumn
Average		**10.3**	**0.6**	**6.8**	**2.9**

- **On Target to grow 11.3 Tonnes DM/Ha in 2015**

- **<u>2016/17</u> :Grow 12.5 t/ha to sustain a stocking rate of 2 Lu/Ha (whole farm, incl silage/reserve)**

Conclusion

Heavy Soils

- Correct Soil PH….Get lime on first.
- Needs a definite lime application plan
- Treat lime the same as any other fertiliser.
- Consider PH maintenance-it will be higher in high rainfall areas
- Consider your soil type and its P “Lock-up” capacity
- High P and K compounds…a little and often
- The benefits of a healthy,responsive & profitable sward are clear to see.

Heavy Soils

Thank You

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