

Ten Steps to Fertiliser Savings

Martina Harrington, Future Beef Manager



The Signpost Programme is a collaborative partnership of farmers, industry and state agencies working together for climate action. For further details please refer to www.teagasc.ie/signpost



Topics

- Importance of lime
- Should I continue to use P&K?
- Make a Fodder budget
- Apply slurry to silage ground
- Cull poor performers



teagasc
Fodder Plan-Winter 2018

Section 1. What Fodder is required on the Farm?

Animal Type	A No. of Stock to be kept over Winter	B Number of Months (Include a reserve for difficult weather conditions)	C Pit Silage Needed/animal month	Total Tonnes of Silage Needed Multiply (AxBxC)
Dairy cows			1.6	
Suckler cows			1.4	
0-1 year old			0.7	
1-2 year old			1.3	
2+ year old			1.3	
Ewes			0.15	
Total tonnes needed				D
Total bales needed (tonnes multiplied by 1.25)				E

Section 2. Calculate silage ground to be cut

Pit silage	F Area (Acres)	G Yield t/acre	Total yield (t) (FxG)
1 st cut		10	
2 nd cut			
3 rd cut			
Total combined			

Bales	I Number of bales	Yield
1st & 2nd cut Bales		0.8
Surplus bales		0.8
Total combined		

Section 3. Calculate total silage produced from

Total silage demand	Total silage produced (H+K)	Tonnes left over/year?
D		



AGRICULTURE AND FOOD DEVELOPMENT AUTHORITY

The Signpost Programme is a collaborative partnership of farmers, industry and state agencies working together for climate action. For further details please refer to www.teagasc.ie/signpost

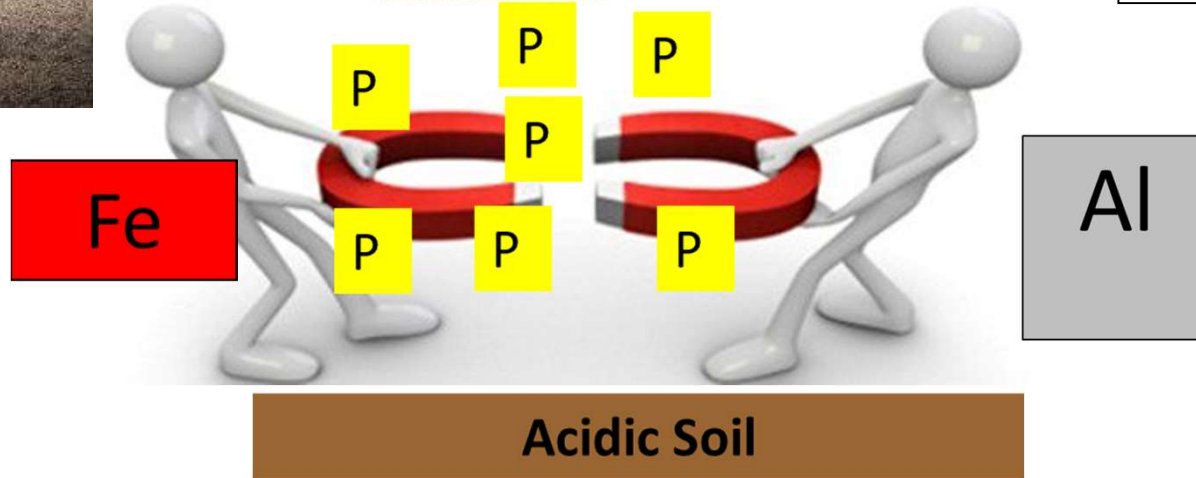


Spread Lime: Acidic Soils Fix P – Mineral Soils

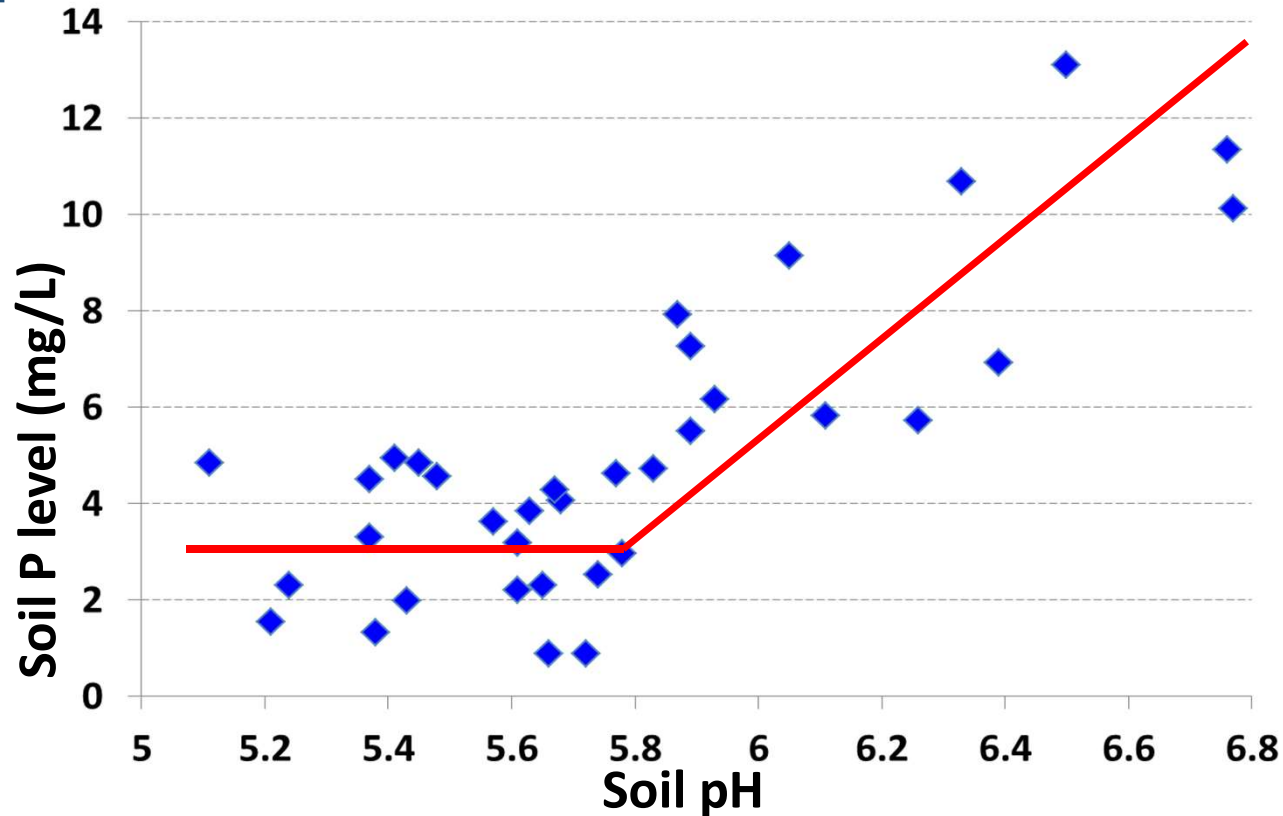
P Fertiliser



“Acidic soils competes for freshly applied P & its is Fixed by Al & Fe”

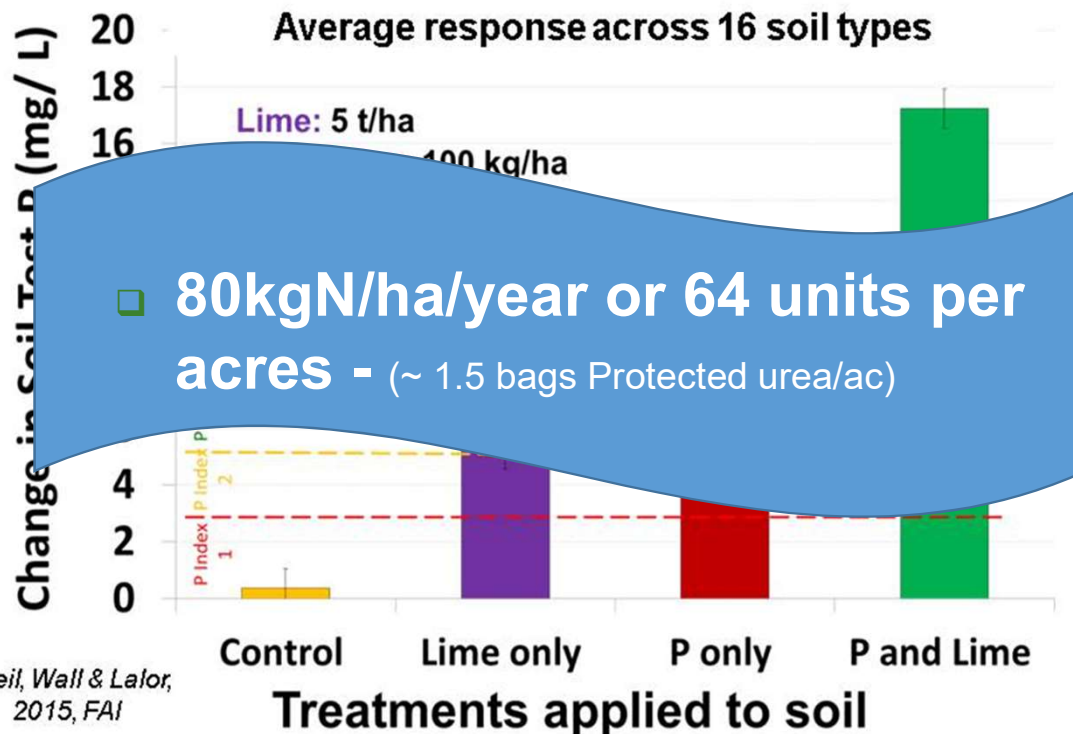


Spread Lime: Acidic Soils Fix P – Mineral Soils



◆ Data points represent the 35 fields on one farm (Doonbeg)

Spread Lime: Acidic Soils Fix P – Mineral Soils



- Lime before building soil P
- Target pH 6.3-6.5



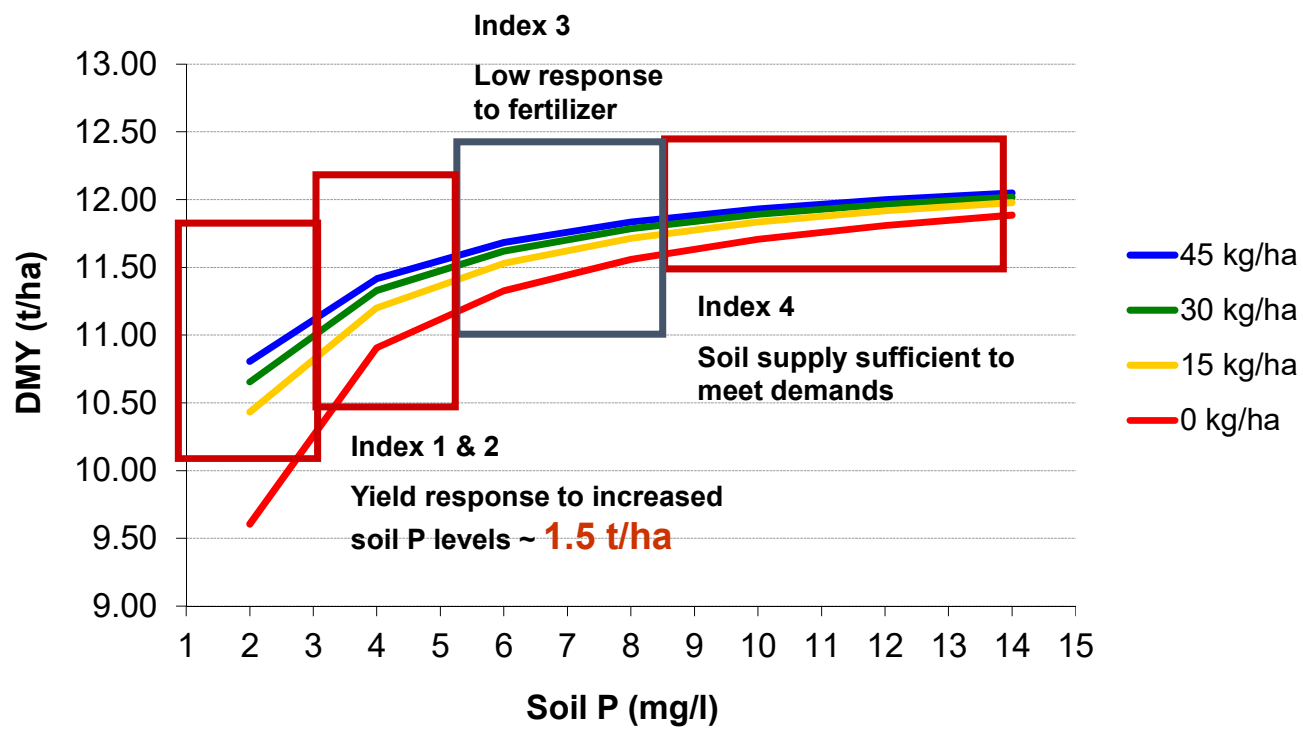
Grazing - all year
Silage Ground – after silage is cut

Average change in soil test P (Morgan's) across 16 soils (av. pH 5.5) treated with P (100 kg/ha of P), Lime (5 t/ha of lime), and P + Lime and incubated over 12 months in controlled conditions

Should you continue to Apply P & K?



Mean dry matter yield response to soil and fertilizer P
(Schulte & Herlihy, 2007)



How much grass do you need to grow?

K – Similar response in silage (1-3 t/ha/yr)



The Signpost Programme is a collaborative partnership of farmers, industry and state agencies working together for climate action. For further details please refer to www.teagasc.ie/signpost

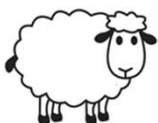


P & K Advice – Replacing offtake



Stocking Rate (LU/ha)	1.5-2.0	2.0-2.5	2.5-3.0	> 3.0
Dairy	P – K advice			
kg/ha	14 – 30	19 – 35	23 – 40	27 – 45
units/acre	11 – 24	15 – 28	18 – 32	22 – 36

Apply phosphorous in the spring when growth starts



Stocking Rate (LU/ha)	1.0-1.5	1.5-2.0	2.0-2.5	2.5-3.0
Beef/Sheep	P – K advice			
kg/ha	7 – 10	10 – 15	13 – 20	16 – 25
units/acre	6 – 8	8 – 12	10 – 16	13 – 20

Maintain in 2022, possibly build again in 2023

Complete a Fodder Budget

- Teagasc Fodder Survey July 2021 - Surpluses on farm
- Kind and mild autumn in 2021
- This spring dry so far – possible early turn out
- Save the silage you do have, silage is high input crop
- Complete your fodder budget in April before closing for silage, ensure to have a buffer – remember 2013/2018
- If you don't need it, don't grow it
- Graze silage ground instead and reduce fertiliser requirements

Enterprise	Region	Winter Fodder balance ¹ %	Approx. Days Short
Dairy	Midlands North East	106	-
Dairy	North West	110	-
Dairy	South East	116	-
Dairy	South West	122	-
Drystock	Midlands North East	128	-
Drystock	North West	131	-
Drystock	South East	134	-
Drystock	South West	127	-

¹Based on planned winter feed demand minus current feed stocks

² Simple (un-weighted) average of fodder balance per farm in sample



SECTION 1: What fodder is required on the farm?				
Animal type	A No. of stock to be kept over winter	B Number of months	C Pit silage needed/ animal/month	Total tonnes of silage needed – multiply AxBxC
Dairy cows			1.6	
Suckler cows			1.4	
0-1 year old			0.7	
1-2 year old			1.3	
2+ year old			1.3	
Ewes			0.15	
Total tonnes needed				Tonnes <input type="text"/>
Total bales needed (tonnes multiplied by 1.1)				Bales <input type="text"/>

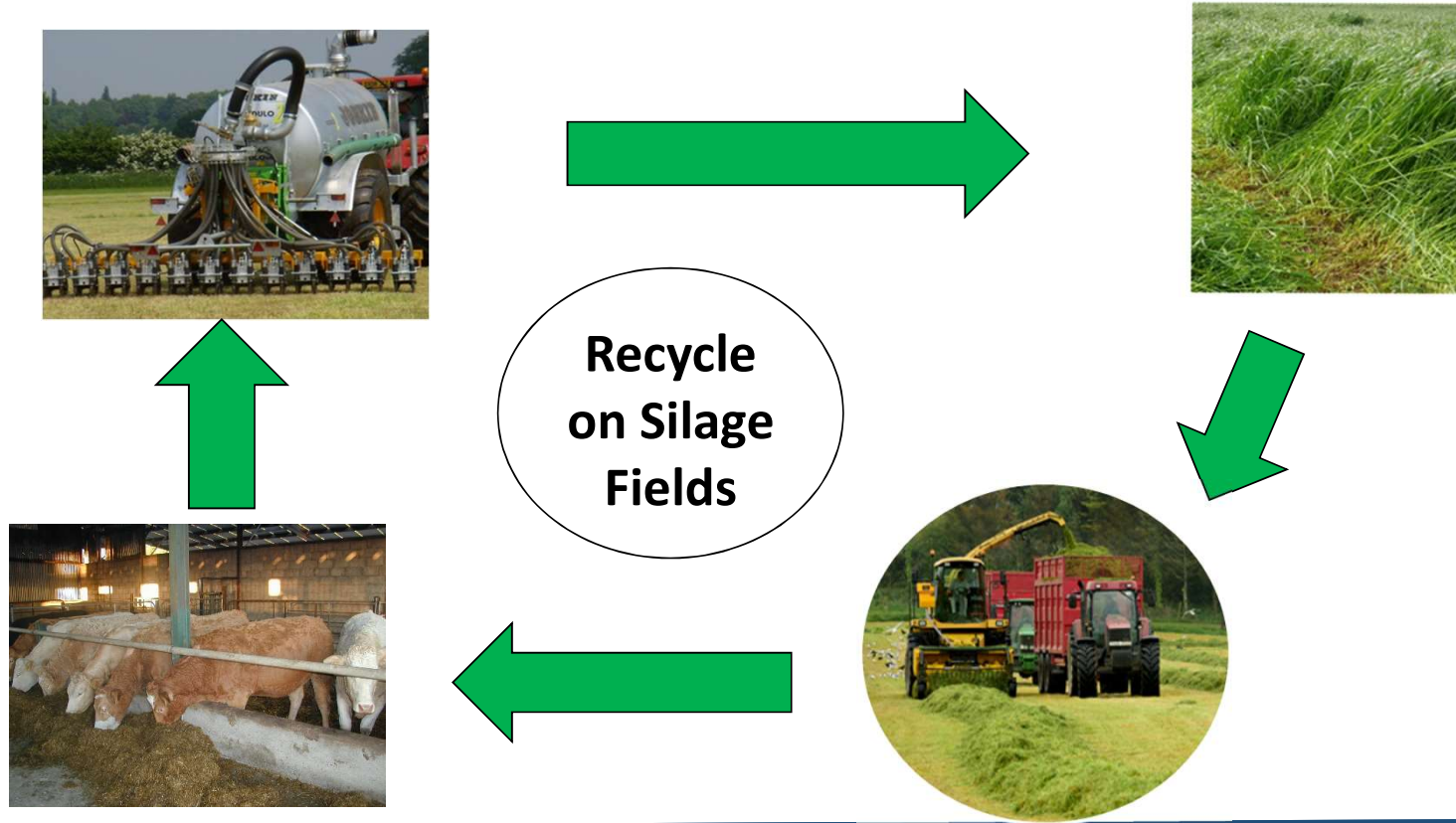
SECTION 2: How much silage is in the yard?



The Signpost Programme is a collaborative partnership of farmers, industry and state agencies working together for climate action. For further details please refer to www.teagasc.ie/signpost



Apply slurry to silage ground



Apply slurry to silage ground

Silage:

Slurry on silage ground → closing nutrient cycle

- P:K supply ratio of slurry ≈ 1:6
- P:K requirement ratio for silage (Index 3) ≈ 1:6
→ Well balanced



Grazing:

- P:K supply ratio of slurry ≈ 1:6
- P:K requirement ratio of grazing ≈ 1:3
→ Poorly balanced
- Excess K
→ Luxury K uptake & Mg levels
→ K might be required elsewhere
- Pig Slurry Ideal for Grazing Ground (1:3)
- Pig Slurry 19-7-20



Typical N, P and K fertiliser replacement values of cattle slurries with varied levels of dilution

DM%	Application Dilution	Application		Fertiliser Value (units/ 1000 gallons)		
		Timing	Method	N	P	K
7	None	Spring	SP	6	5	30
				10		
5	1/3 water, 2/3 slurry	Spring	SP	4	4	28
3	2/3 water, 1/3 slurry			Summer		
		TS/BS	3			

Worth €40 per 1000 gals

*SP = Splash Plate
*TS/BS = Trailing Shoe/Band Spreader

Cull poor performers

- Cull cows not in calf or that have long calving interval
- Mark cows with poor calves, had calving difficulty, udder issues etc wean early and cull
- Watch late calvers, can they be pulled back, if not cull
- Cull cows with high somatic cell counts
- Use milk recording to identify poor milkers, consider culling
- Health issues, bad feet etc.
- Cull any ewes that loose lambs if not fostered
- Mark ewes that had difficult lambing, bad teeth, bad feet or other issues, wean early and cull

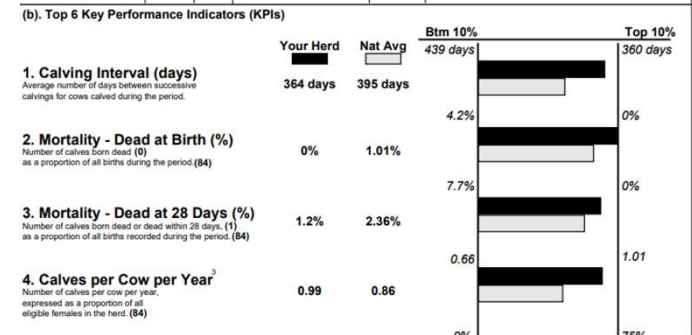


1(3)

(a). Summary Data – Report is based on beef cows that calved between 01/07/2020 and 30/06/2021 (Embryo births excluded)

Spring Calving Dates					
	Start Calving	Median Calving ¹	Last Calving	Calving Period	
All	16/02/2021	19/03/2021	25/06/2021	18 weeks + 3 days	Avg Age Calving (Herd) 5y 1m
Cows	16/02/2021	15/03/2021	25/06/2021	18 weeks + 3 days	Avg Age Calving (Cows) 5y 11m
Heifers	02/03/2021	04/04/2021	13/05/2021	10 weeks + 2 days	Avg Age Calving (Heifers) 2y 0m

	All			Heifers			Eligible Females ² 84
	Total	Male	Female	Total	Male	Female	
Total Calves born	84	38	46	17	8	9	Total Beef Calvings 84
Calves Live at Birth	84	38	46	17	8	9	Total Heifer Calvings 17
Calves Dead at Birth	0	0	0	0	0	0	Calves - Live at 28 days 83
							Cows not calved 0



The Signpost Programme is a collaborative partnership of farmers, industry and state agencies working together for climate action. For further details please refer to www.teagasc.ie/signpost



In Summary

- Take a good set of soil samples
- Apply lime first
- Apply P&K where required
- Maintain soil index's, can build in 2023
- Do a fodder budget
- If you don't need it don't grow it
- Recycle your slurry onto silage ground
- Cull any poor performers