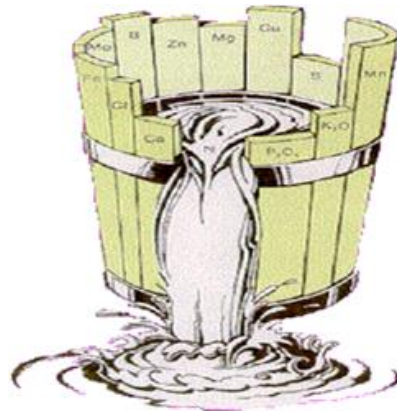


Protecting N & P Inputs on Farms

***Mark Plunkett, Teagasc,
Johnstown Castle, Wexford***



Teagasc Soil Analysis Summary Report

Field No.	Sample No.	Date	Location	Depth (cm)	Moisture (%)	pH	N (g/kg)	P (g/kg)	K (g/kg)	Ca (g/kg)	Mg (g/kg)	S (g/kg)	Zn (g/kg)	Cu (g/kg)	Mn (g/kg)	B (g/kg)	Mo (g/kg)
10000001	10000001	10/05/2017	Field 1	0-10	15.2	6.5	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2
10000002	10000002	10/05/2017	Field 2	0-10	15.2	6.5	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2
10000003	10000003	10/05/2017	Field 3	0-10	15.2	6.5	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2
10000004	10000004	10/05/2017	Field 4	0-10	15.2	6.5	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2
10000005	10000005	10/05/2017	Field 5	0-10	15.2	6.5	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2
10000006	10000006	10/05/2017	Field 6	0-10	15.2	6.5	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2
10000007	10000007	10/05/2017	Field 7	0-10	15.2	6.5	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2
10000008	10000008	10/05/2017	Field 8	0-10	15.2	6.5	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2
10000009	10000009	10/05/2017	Field 9	0-10	15.2	6.5	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2
10000010	10000010	10/05/2017	Field 10	0-10	15.2	6.5	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2

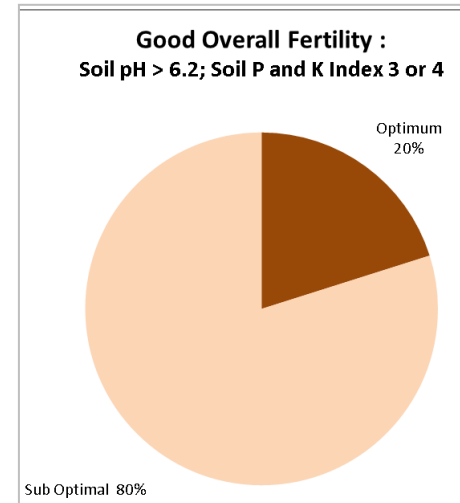


Nutrient Efficiency – Factors

- Soil Testing
- Soil pH & Liming
- Farm Nutrient Requirements
- Utilising Cattle Slurry
- Selecting Fertiliser Types
- Nutrient Application Programmes

1. Soil Testing - Foundation

- ~ 200,000 soil samples
- Soil fertility (pH, LR, P & K)
- Monitor soil fertility changes
 - Index 1's to Index 4's (take action)
- Response to nutrient applications



2. Soil pH & Lime



Double Dividend!

- Increases nutrient availability

- Soil N release

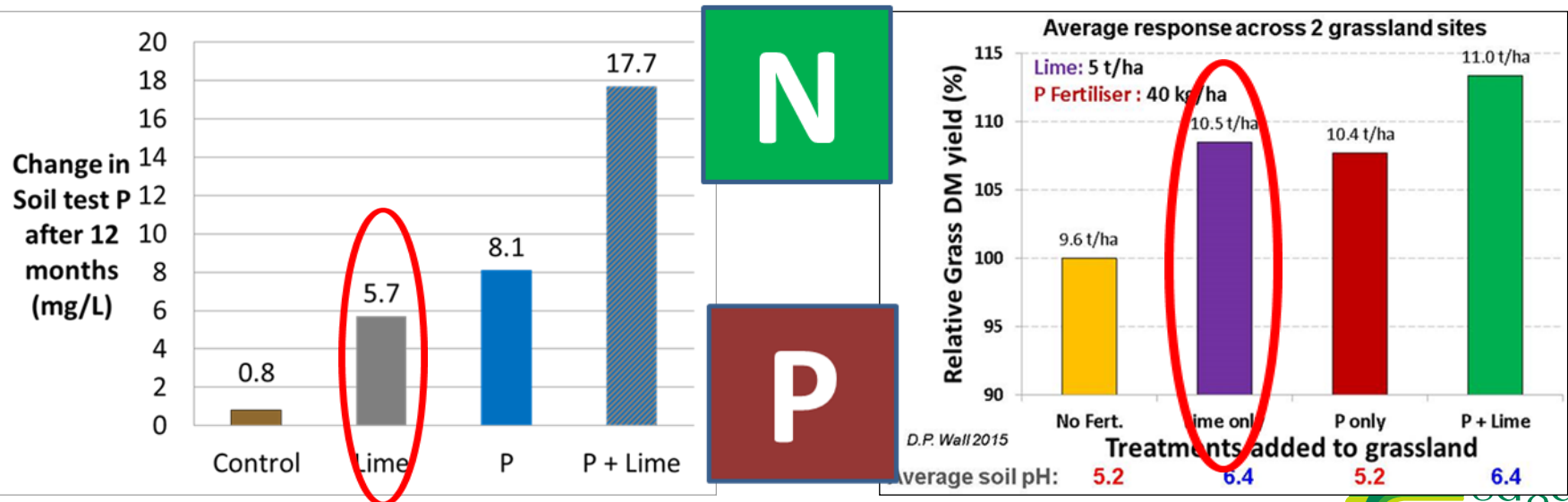
- 70kgN/ha/year (€70/ha)

- Increases soil P fertility / availability

- Index 1 to Index 2 (10kg P / €25/ha)

~ 50kg P to
move 1mg / L
Index 1 to 2
150 kg P /ha
Costs -
€300/ha

Lime
Costs
€25/ha/yr



3. Farm Nutrient Requirements

- Completing a farm fertiliser plan
- Lime advice & plan
- N, P, K & S advice – Rates & Timings
- Farm soil fertility review
- Soil Fertility Mapping
- Meeting farm CC req.'s

A screenshot of a spreadsheet titled 'Soil Fertility Review 2014-15'. The spreadsheet contains columns for various soil fertility parameters and fertiliser application rates. The data is organized into rows, with some cells highlighted in green and others in yellow. The spreadsheet is tilted at an angle.

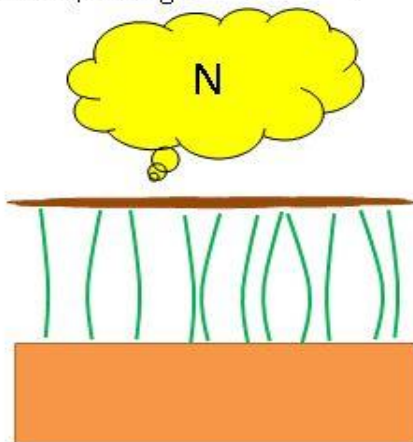
4. Efficient Use of Cattle Slurry



Method of Application & Timing



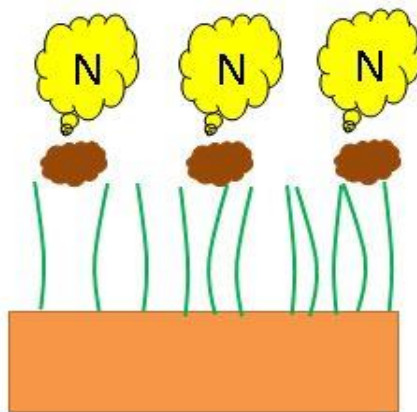
	Spring	Summer
Units N/1000 gal	6	3



Splash-plate



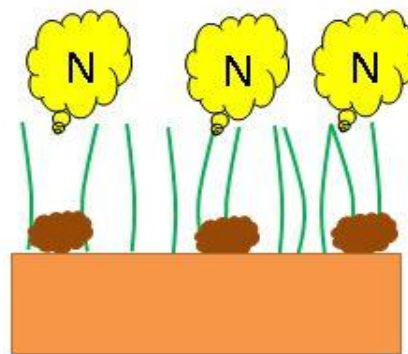
	Spring	Summer
Units N/1000 gal	9	6



Dribble bar



	Spring	Summer
Units N/1000 gal	9	6



Trailing shoe

Spring Application

cloudy

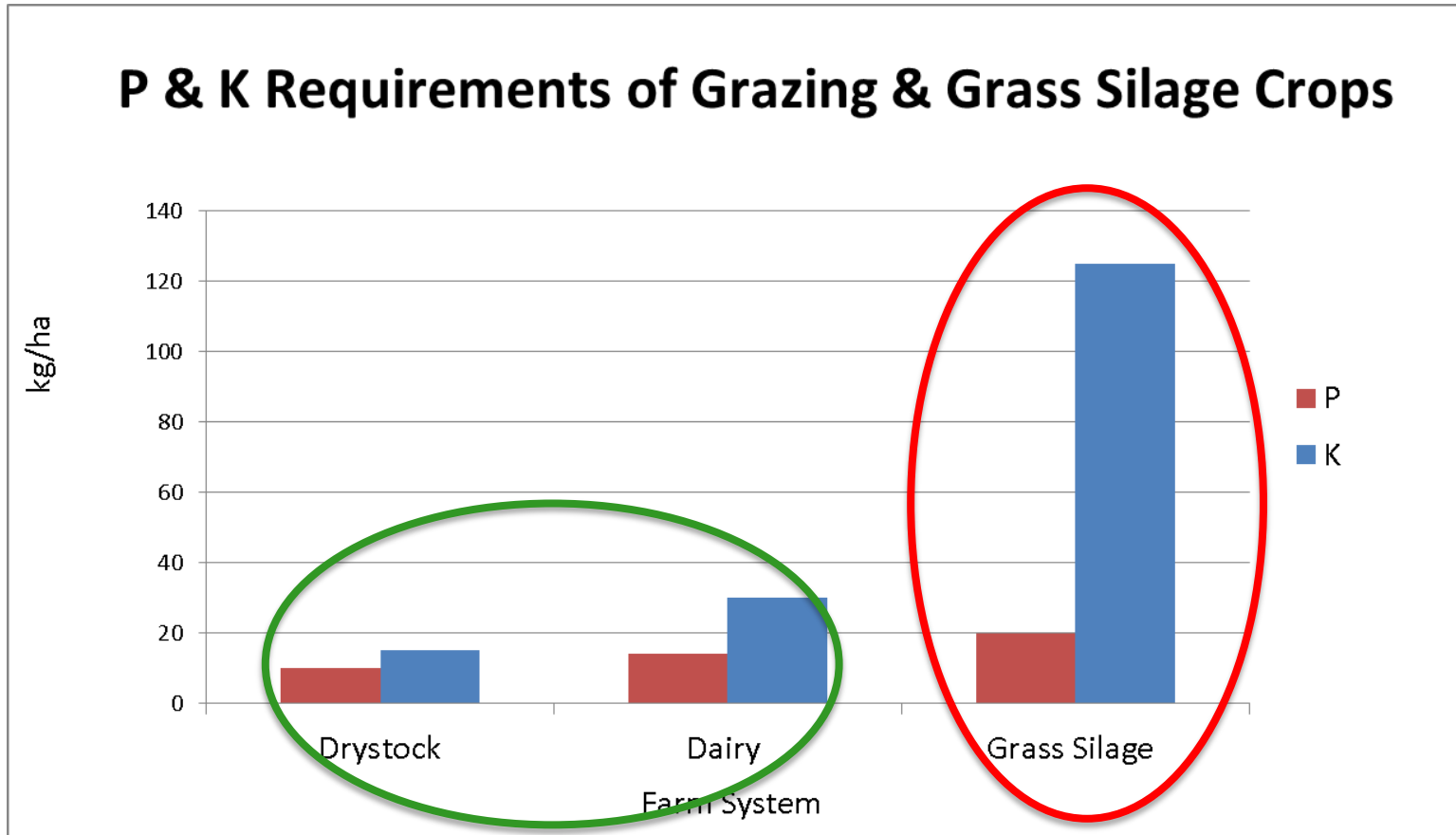


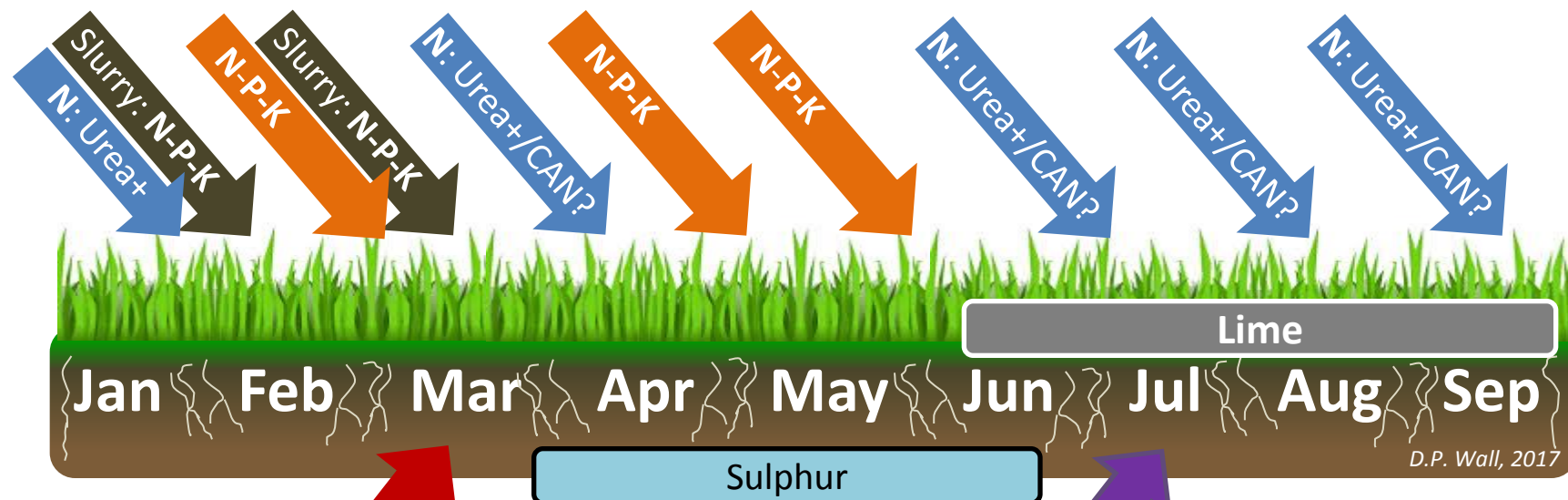
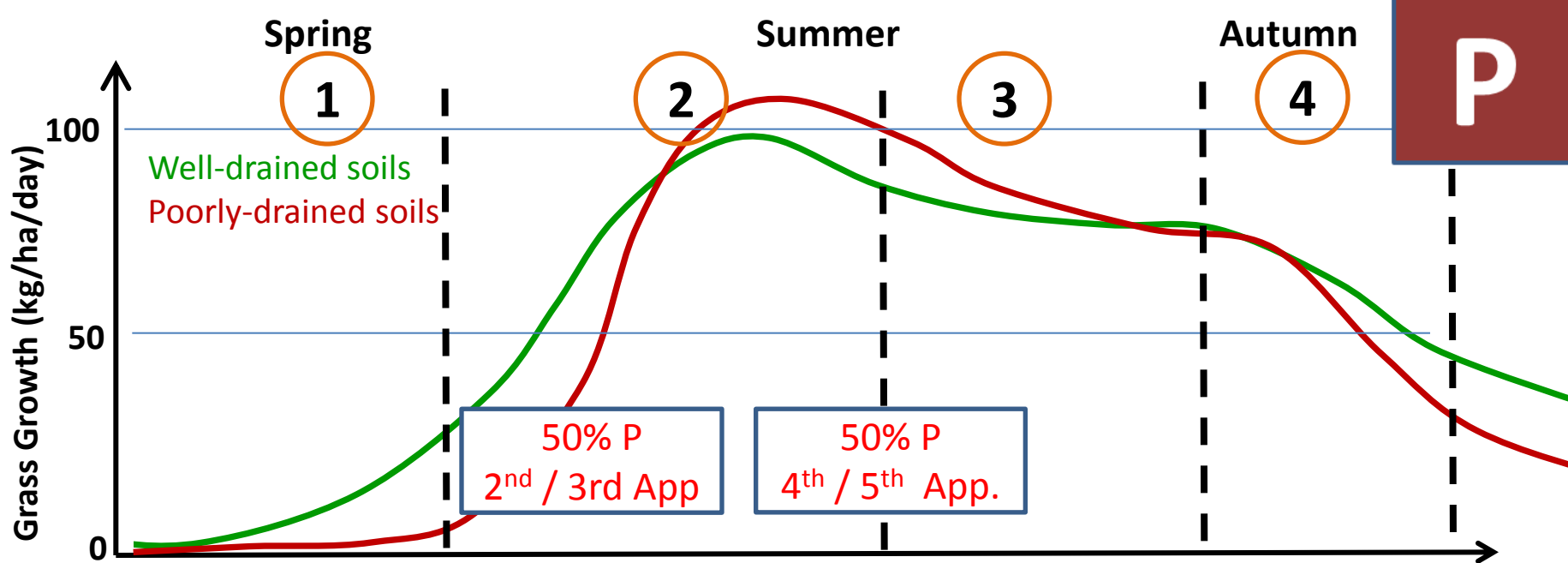
sunny



Every 1m³ = 1kg N

5. Grass P & K Req. (Index 3)





Urea+ = Protected Urea

Farm Fertiliser.. Types

- Protected Urea 46% }

Nitrogen Source

- 18-6-12 +S }

- 23-10-0 +S }

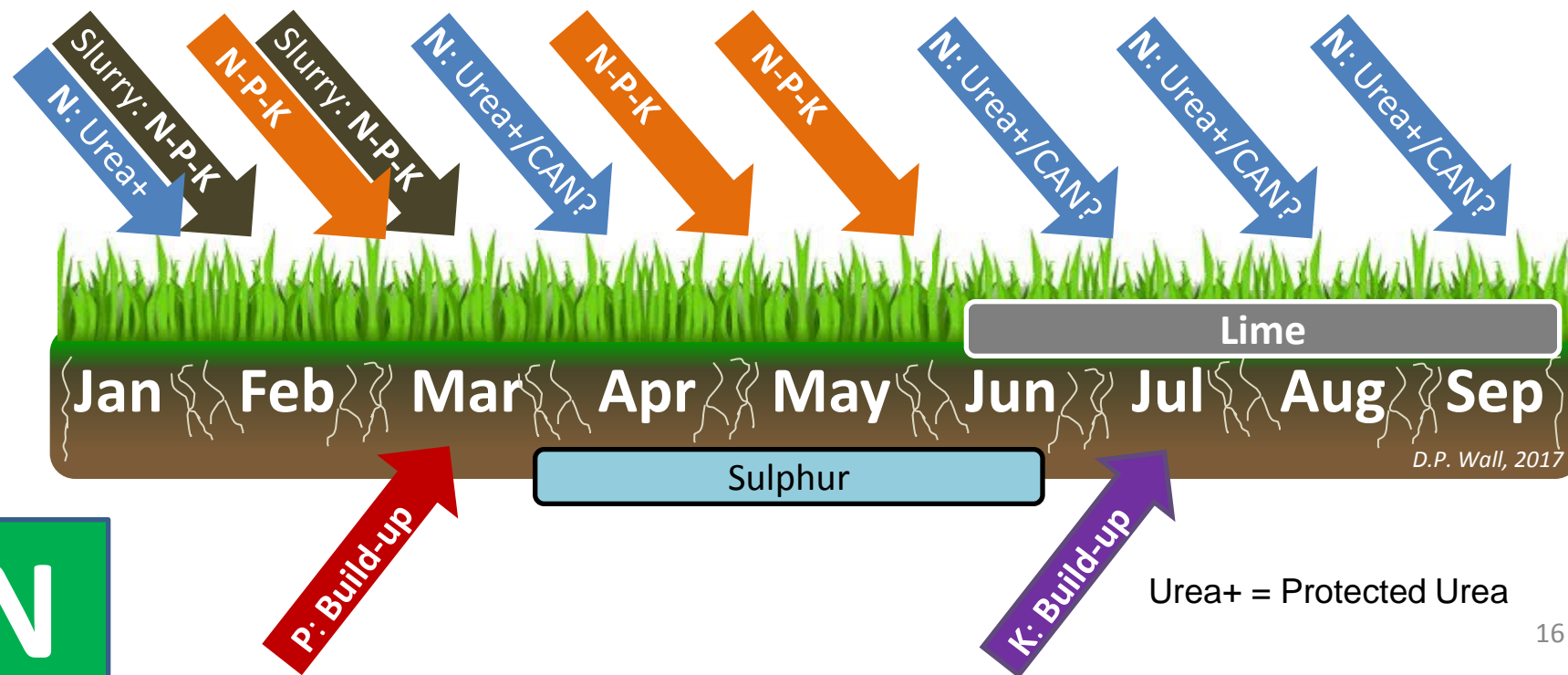
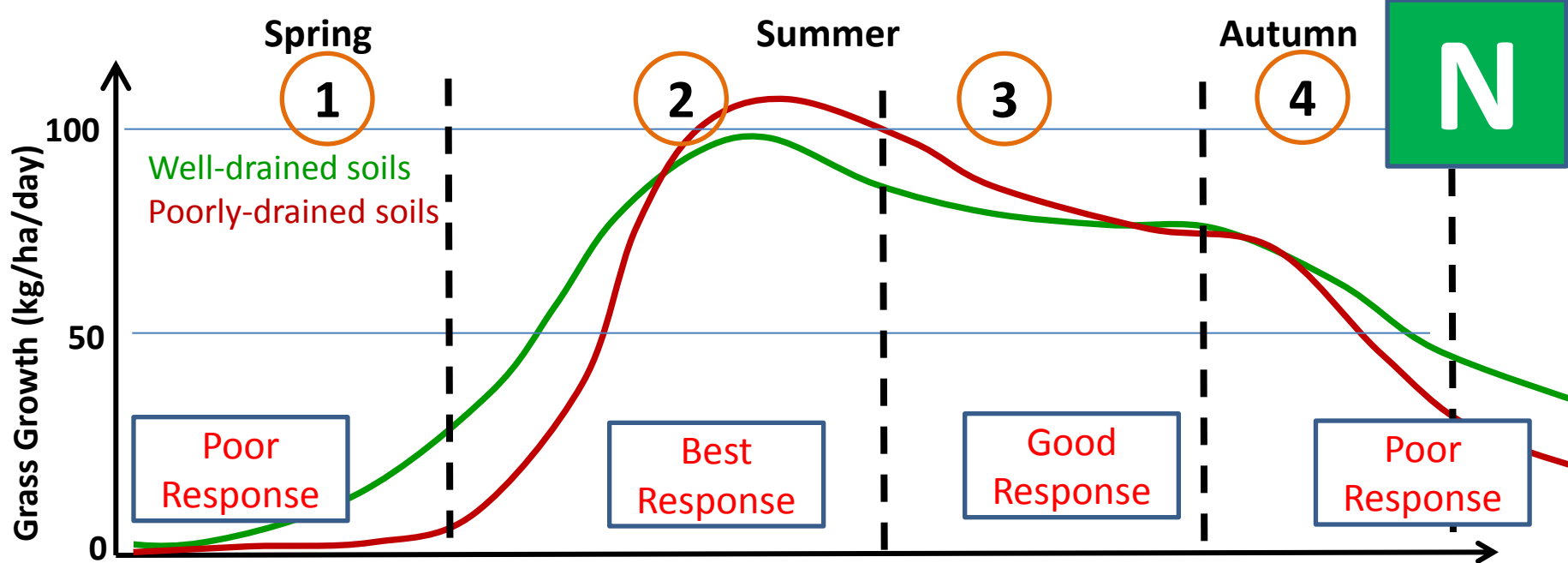
**P & K Sources
Grazing**



- Cattle Slurry
- 6-5-32
- Top Up Options
 - 24-2.5-10 +S
 - 27-2.5-5 +S

**P & K Sources
Silage areas**





6. Fertiliser Programme

N, P & K Advice (kg/ha) & fertiliser products (kg/ha) – **Free Draining Soil**

Farm stocked at **210kg Org N/ha** or 2.5 LU/ha

Soil P Index 2 and K Index 2 Feeding 2.5 t/ha Conc. Feed – P adjustment (- 9kg P/ha)

Advice		Feb	March	April	May	June / July	Sept	Total kg/ha
Product (kg/ha)		ProUrea 55 kg/ha	18-6-12+S 300 kg/ha	ProUrea 120 kg/ha	18-6-12+S 300kg/ha	ProUrea 60 kg/ha	ProUrea 60 kg/ha	
N	250	25	54	55	54	28	28	244
P	37		18		18			36
K	65		36		36			72
S	20		9		9			18

Early P

Mid-Season P

In Summary

- Soil test results & nutrient decisions / planning
- Lime – The 1st Step – Priming / Conditioning soils
- Prepare farm fertiliser plan & Consult regularly
- Recycle all cattle slurry on silage area
- Identify crop nutrient requirements
- Select a suitable fertiliser blends to match the soils & crops on your farm



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Soil & Soil Fertility

The health of our soil is a key component to the efficient utilisation of soil nutrients in the production of food in an environmental and sustainable manner.



What's New

- [3rd Cut Grass Silage N,P,K,S \(PDF\)](#)
- [Teagasc Soil Fertility Report 2020 \(PDF\)](#)
- [Protected Urea - Cost Efficient N May 2020 \(PDF\)](#)
- [Fertiliser Programme Kg Ha Soil P Build Up \(PDF\)](#)
- [Signpost series protected urea- Webinar presentation \(PDF\)](#)
- [Protected Urea List- May 2020 \(PDF\)](#)
- [Common Nutrient Deficiencies n Spring Cereals No.2 \(PDF\)](#)
- [Common Nutrient Deficiencies in Spring Cereals No.1 \(PDF\)](#)
- [Importance of Sulphur \(S\) for Grass & Crop Production \(PDF\)](#)
- [Grassland Other Nutrients \(PDF\)](#)
- [Protected Urea – Cost Efficient N \(PDF\)](#)
- [Pig Manure Booklet 2020 \(PDF\)](#)
- [Organic Manure N P & K Values 2020 \(PDF\)](#)
- [Fertiliser programme kg ha 2020 April Update \(PDF\)](#)
- [Protected Urea List April, 2020 \(PDF\)](#)
- [Fertiliser Advice for Grass Establishment \(PDF\)](#)
- [W Cereal Fertiliser Advice Update 2020 \(PDF\)](#)
- [1st Cut Grass Silage N P K Req's \(PDF\)](#)
- [Technical Bulletin No.5 Potassium \(PDF\)](#)
- [Q & A Protected Urea December 2019 \(PDF\)](#)
- [Early Nitrogen Advice Grassland \(PDF\)](#)
- [Protected Urea List- December 2019\(PDF\)](#)
- [Have we turned the corner with national soil fertility? \(PDF\)](#)
- [Efficient Use of Phosphorus In Agriculture Tech Bulletin \(PDF\)](#)
- [Major & Micro Nutrient Advice For Productive Agricultural Crop](#)