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Creating a Win-Win Scenario for the Farmer & the Environment

Reducing fertiliser costs and increasing nutrient use efficiency (NUE) benefits the farmer and the environment

Join the Grass10 & PastureBase experts along with Researcher David Wall as they outline the challenges & opportunities to increase nutrient use efficiency with the help of PastureBase Ireland

Wednesday, 13th January | 7pm

Hear from special guest, dairy farmer ***Kevin Moran*** and learn how he records his soil fertility and fertiliser on PastureBase and how this helps him become more nutrient efficient on his farm.

Or visit *www.teagasc.ie/grass10*

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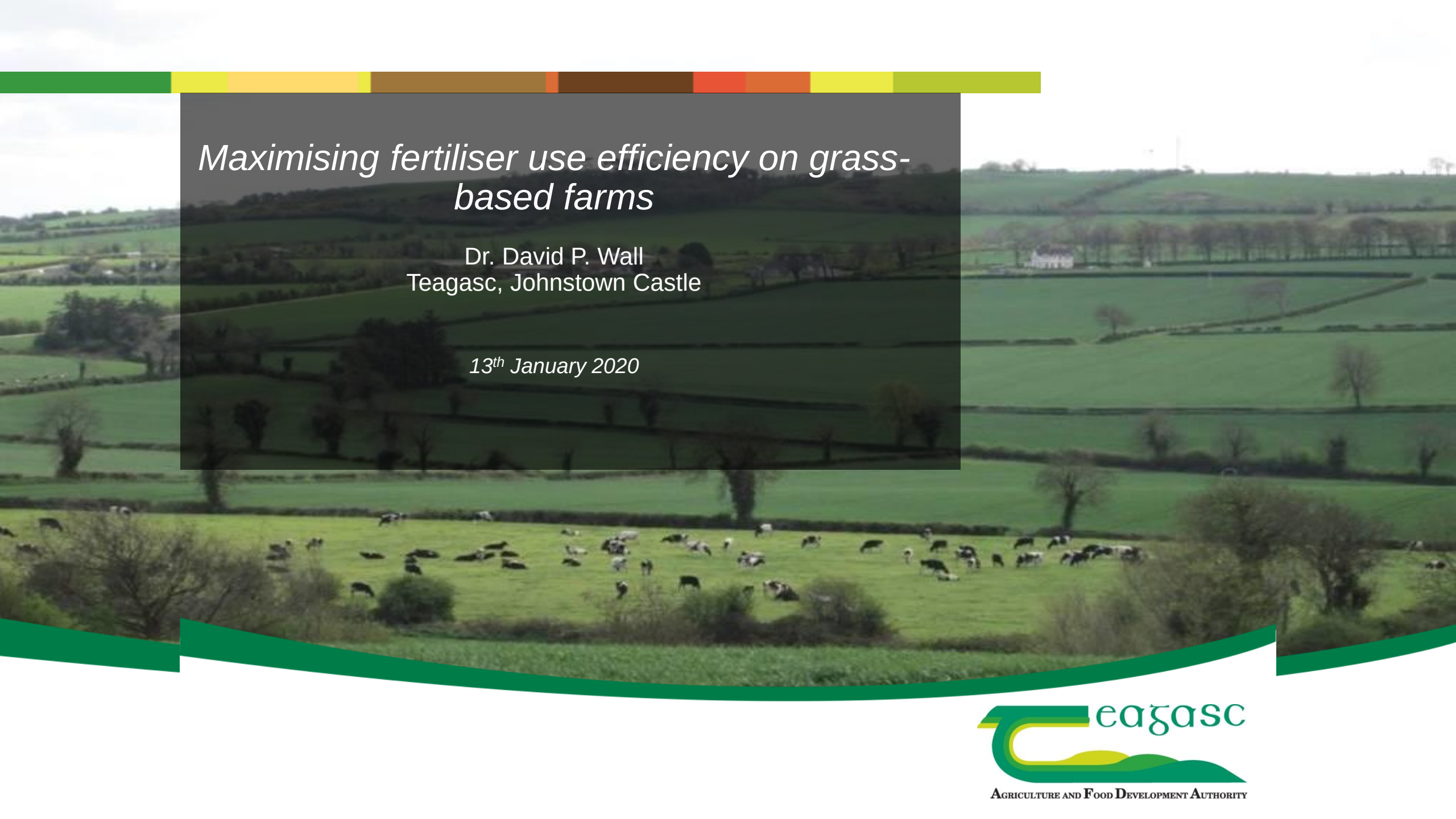
Grassland Excellence for Irish Livestock

PastureBase Ireland



Maximising fertiliser use efficiency on grass-based farms

Dr. David P. Wall
Teagasc, Johnstown Castle

13th January 2020

Agriculture and Food Development Authority

Nutrient Use on Farms:
Where are the signs pointing over the next decade?

European Commission

The "**Farm to Fork Strategy"** is at the heart of the **European Green Deal**

States the EU Commission's intention to:

"act to **reduce nutrient losses by at least 50%"**
Signals "will **reduce the use of fertilisers by at least a 20% by 2030**"

!

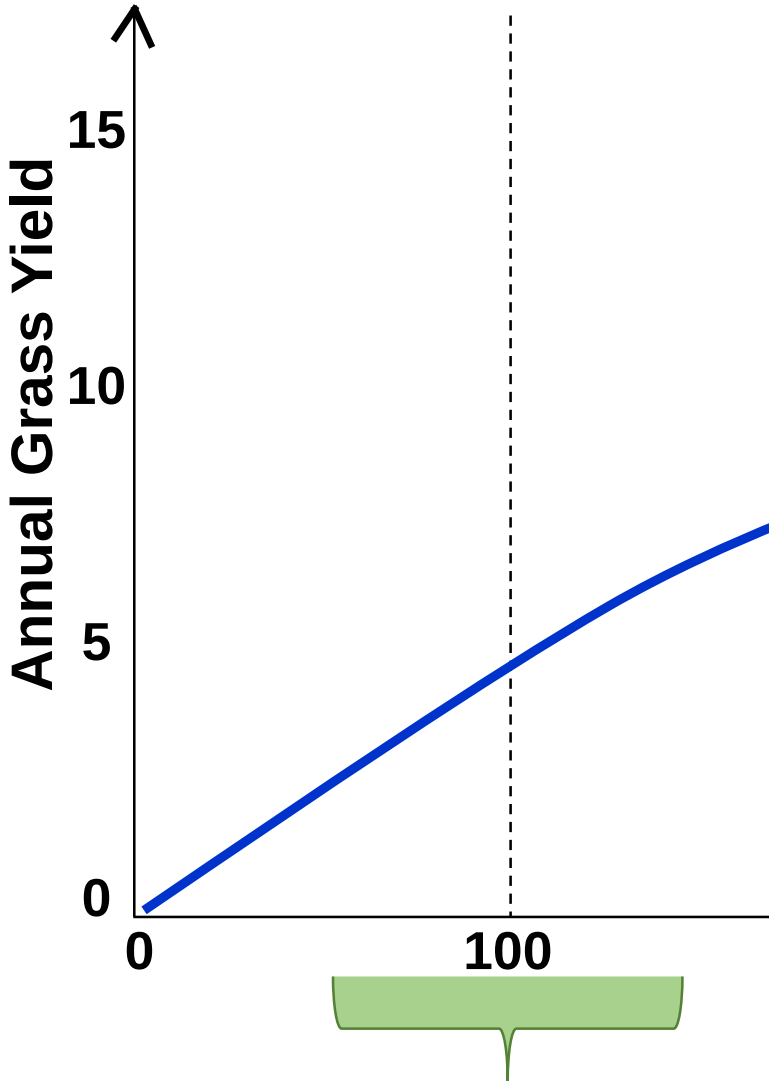
Why?

Because, as outlined, nutrients not absorbed by plants are a
" major source of **air**, **soil** and **water pollution** and of **climate impacts**"
and
"It (fertiliser) has **reduced biodiversity** in rivers, lakes, wetlands and seas"

Source: EU Commission, 2020, Communication – A Farm to Fork Strategy for a fair, healthy and environmentally friendly food system

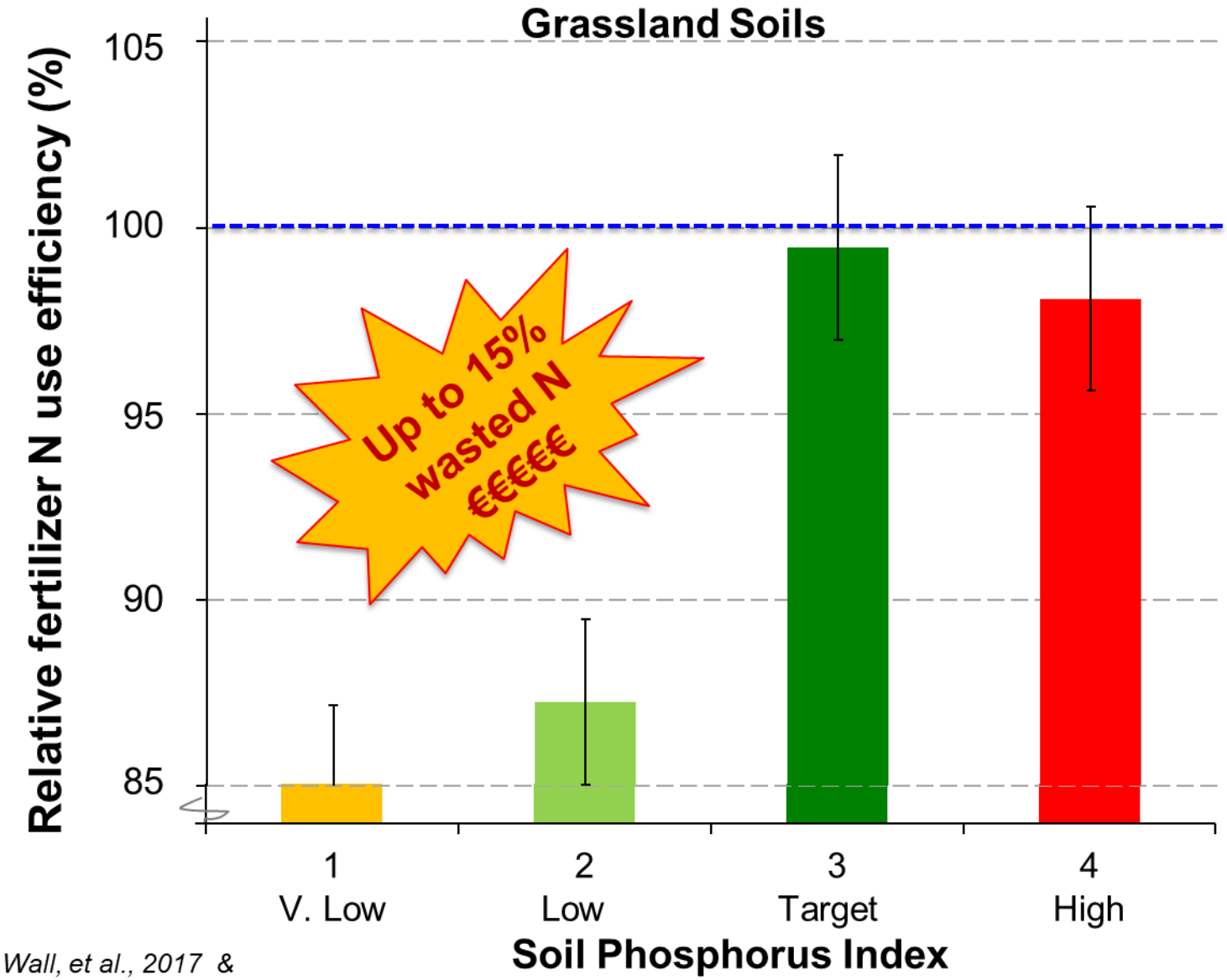
How can be Increase the Efficiency of Fertilisers?

- What sources of N are available to grow the grass?



- Soil N Supply: 50 -180
  - N supplied through breakdown of soil organic matter

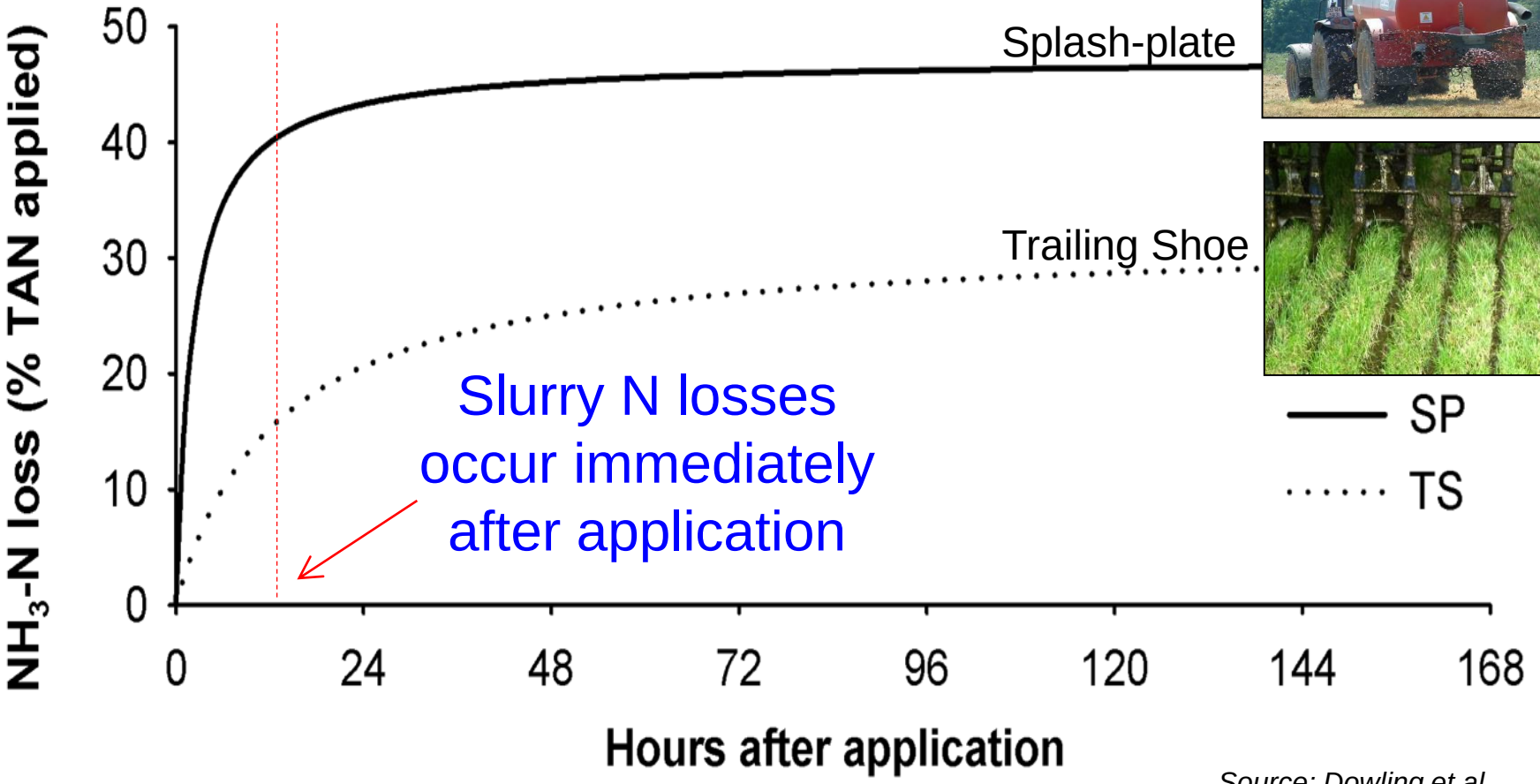
Why Build Soil Fertility?



Data: Wall, et al., 2017 & Herlihy et al., 2004

Reducing N Loss – LESS?

Slurry Application method



Source: Dowling et al.

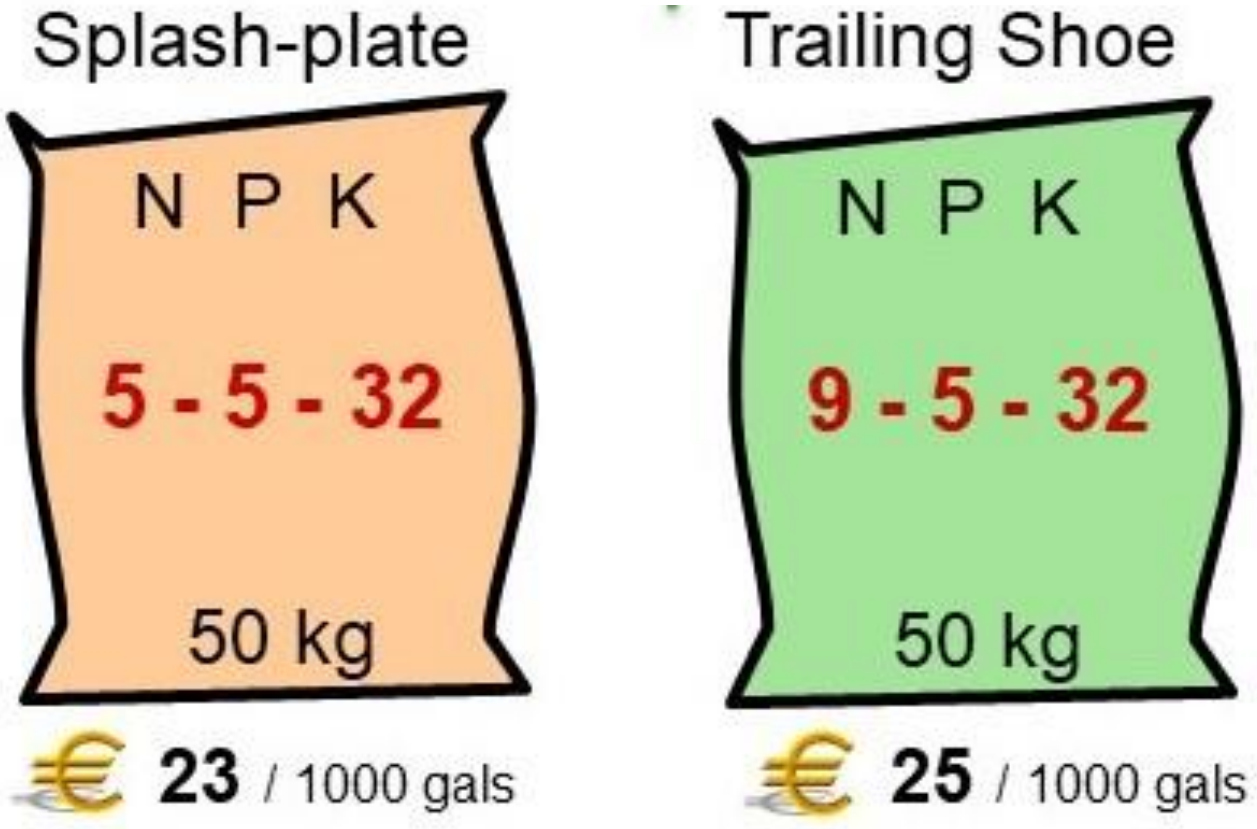
TrailingShoe (TS) reduced emissions by 34% compared to SplashPlate (SP)

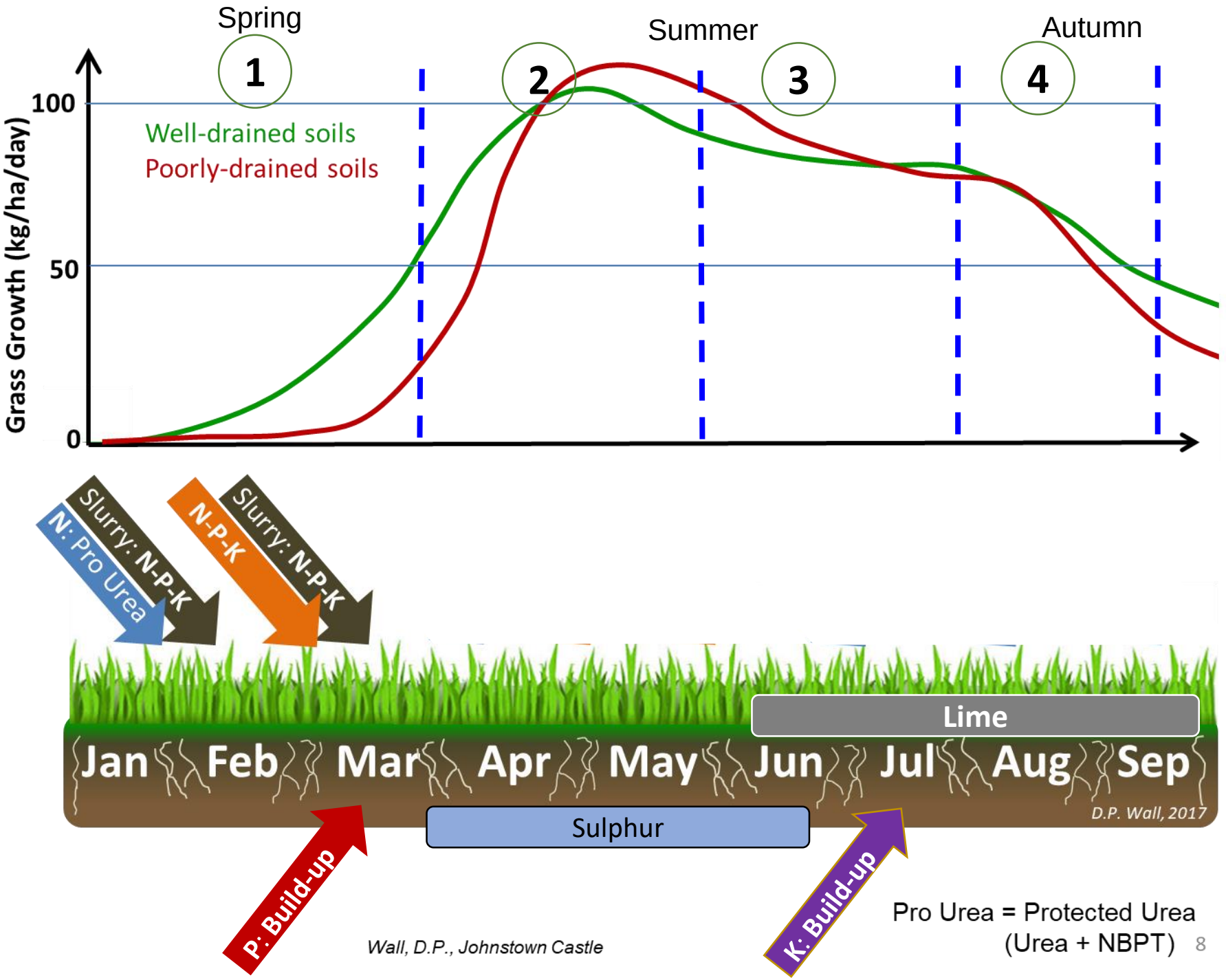
- Reductions with TS of up to 65% of total emission found in some studies

Effect of Slurry Application method on N content

How much N-P-K in 1000 gallons Cattle Slurry?

Low Emission Slurry
Spreading method (LESS)





Wall, D.P., Johnstown Castle

Pro Urea = Protected Urea (Urea + NBPT)

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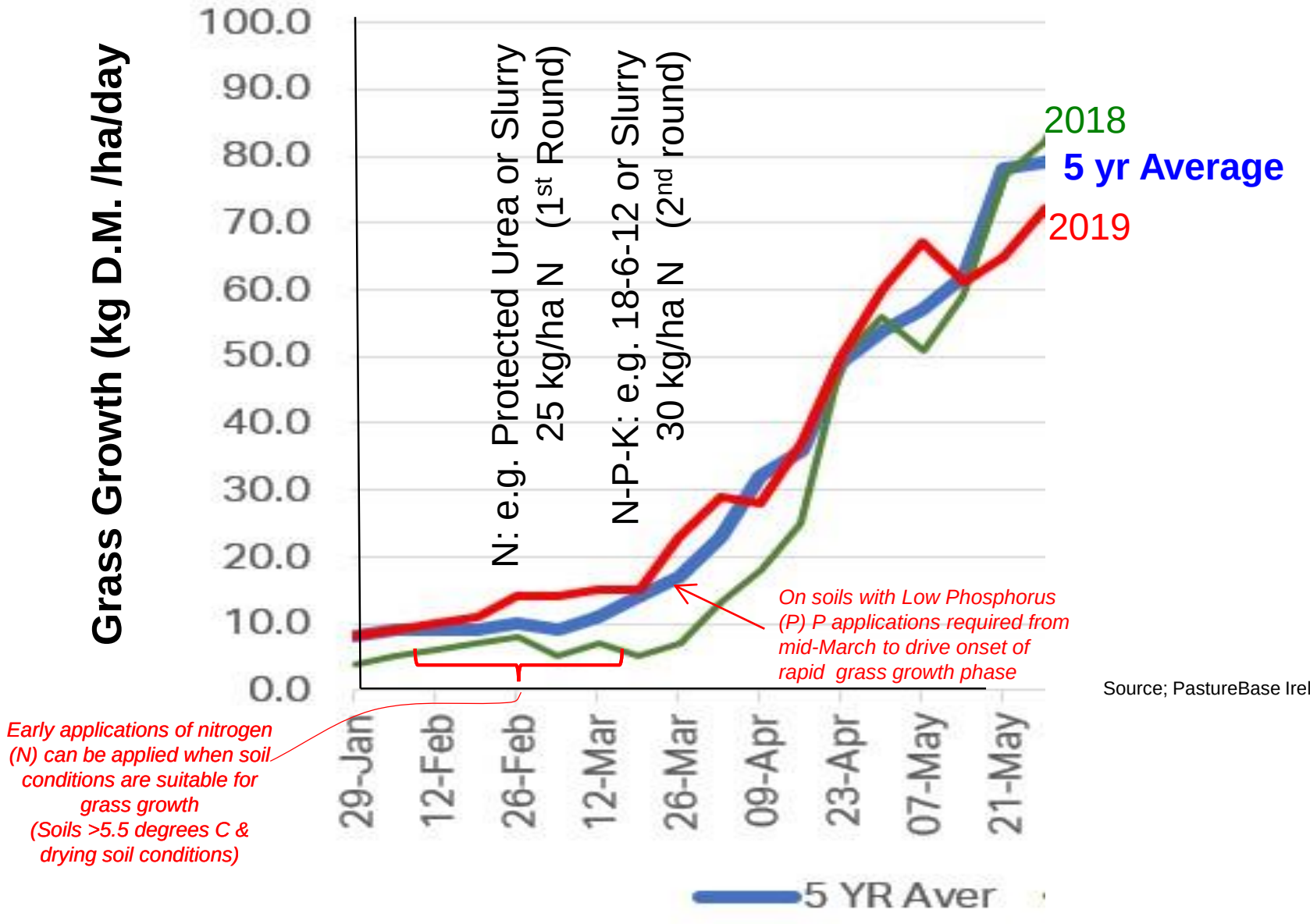
Early Season Fertiliser Applications?



Source; PastureBase Ireland

Wall, D.P., Johnstown Castle

Kevin's Grass Performance for 2020

Annual Tonnage	15.8 T DM/ha
Grazing Yield	11.6 T DM/ha
No. Grazings Per Paddock	7.2
Silage Yield	4.2 T DM/ha
No. Silage Cuts Per Paddock	0.9
Pre-Grazing Yield	1608 Kg DM/ha
No. Farm Walks Per Year	41
Days at grass	272

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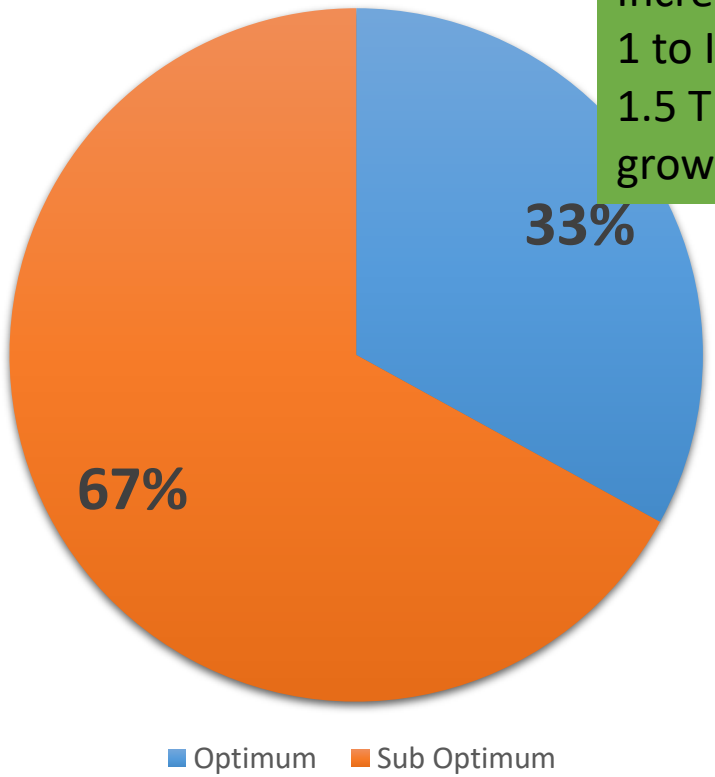
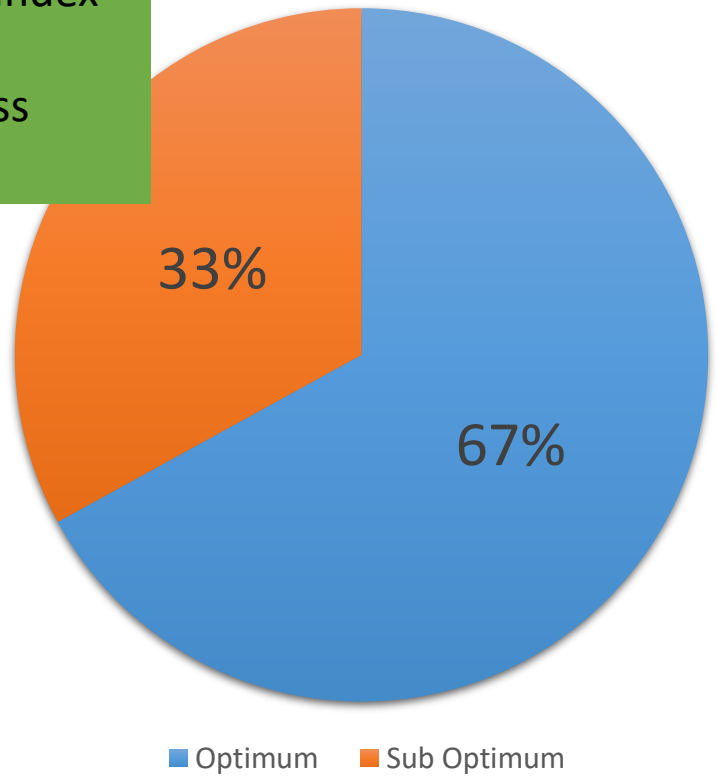
Soil Fertility - 2014



Grass Grown – 13.4 T DM/Ha

Increasing Soil P from Index 1 to Index 3=
1.5 T DM/Ha extra grass growth

Soil Fertility- 2020



Grass Grown- 15.8 T DM/Ha

Correct Lime status (6.3- 6.5) can save up to 60 units N per acre per year= 1.25 bags of Protected Urea

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Goal for 2021
10% reduction in Chemical N applied (24Kg N/Ha)

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3 areas where Kevin is aiming to improve Nitrogen Use Efficiency with PastureBase

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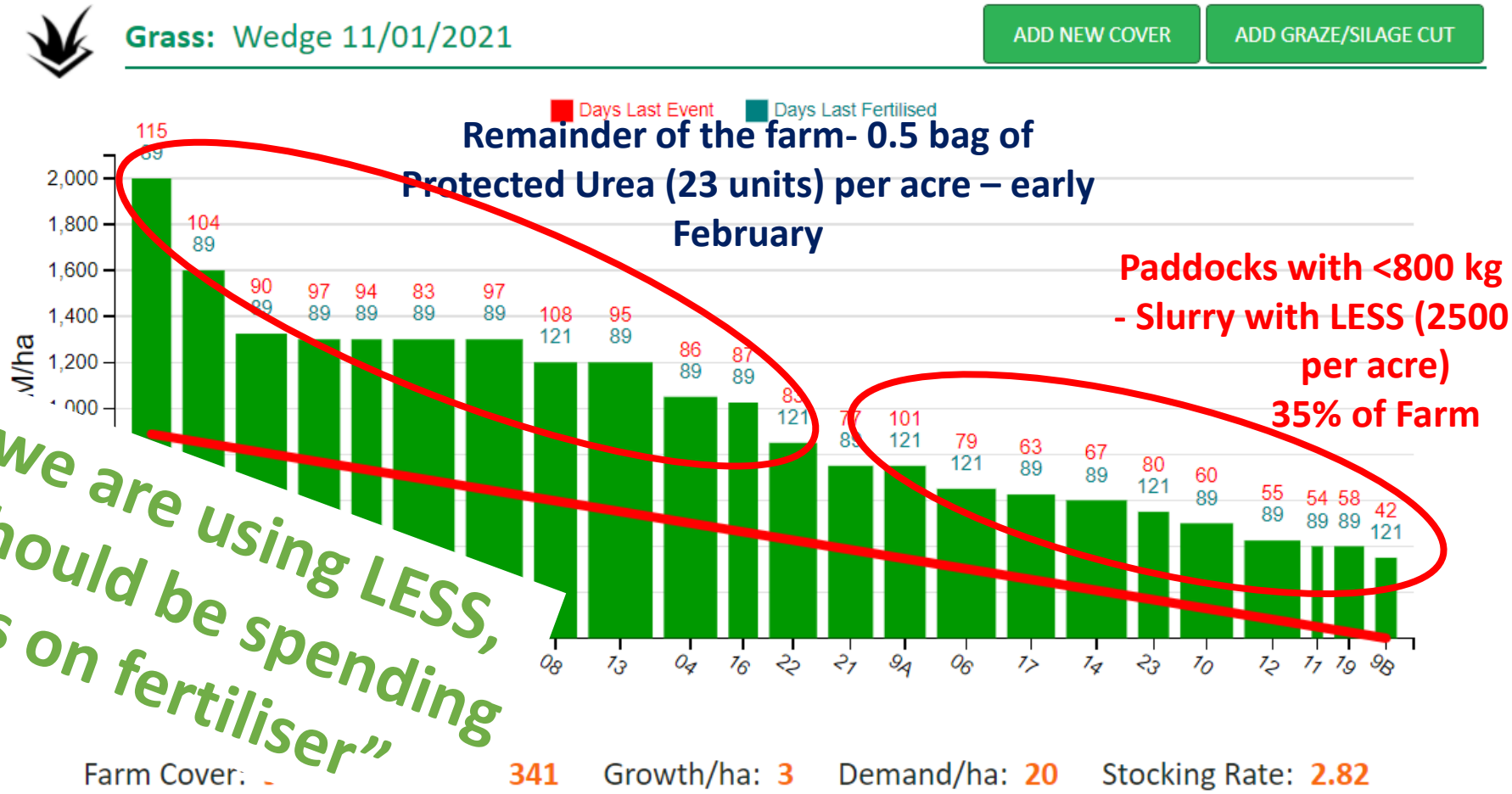
1. Complete Opening AFC and identify paddocks for Slurry with LESS



Using LESS will save 15Kg N/Ha on Milking Platform

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2. Fertiliser Application throughout the midseason

Protected Urea has lower nitrous oxide (N2O) emissions compared to CAN & lower ammonia (NH3) losses compared to urea

Moving away from blanket spreading during mid season

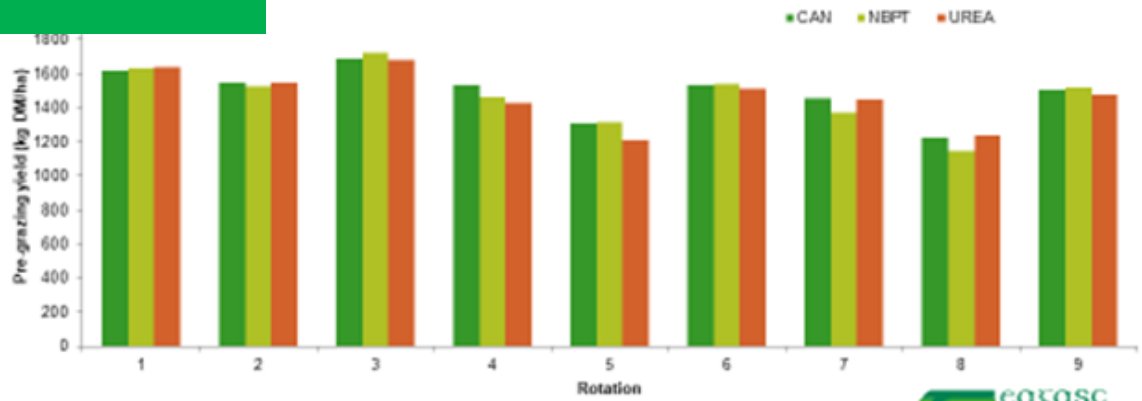
25 Kg/Ha (20 units/acre) of Protected Urea after grazing

6 Kg N/Ha saved over 5 rotations= 30 Kg N/Ha (½ bag per acre) Protected N saved

15 Kg N/Ha saved with more targeted fertiliser programme over the summer

Protected Urea grazing plots (2019/2020)

	CAN	NBPT	Urea
re-grazing yield (kg M/ha)	1,490	1,470	1,464
rass grown g DM/ha)	13,485	13,282	13,213



Average of six site years, 9 cuts in Clonakilty, Moorepark (2 years) and Ballyhaise . 7 cuts in Athenry (1 year)

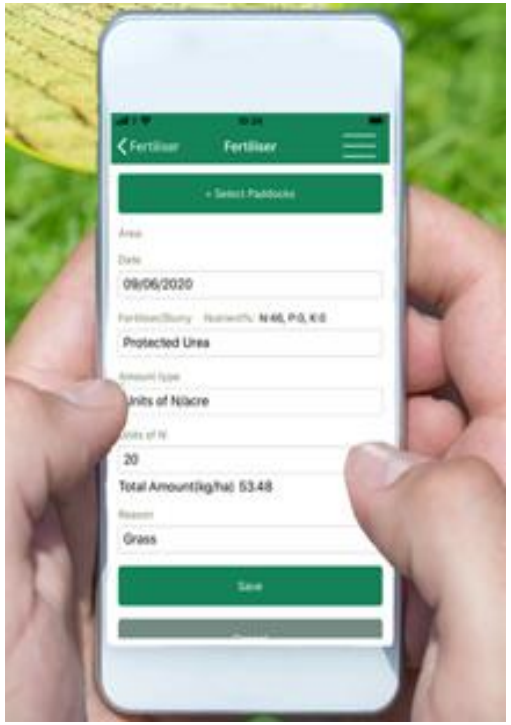
Cost Effective N!

N Type	Urea 46% N + NBPT	CAN (27% N)
Cost / kg (April 2020)	0.80c	0.93c

3. Clover

- Reseeding recorded on PastureBase Ireland
- Ability to fix up to 100Kg N Ha/year
- Soil fertility paramount to establish and maintain clover
- Ability to reduce fertiliser from May

Clover incorporated in 25% of the farm
Chemical N reduced by 60 Kg/Ha in these paddocks over 5 rotations
Whole farm saving 15kg N/Ha



How can PastureBase Ireland help farmers to optimise Soil Fertility in Paddocks?

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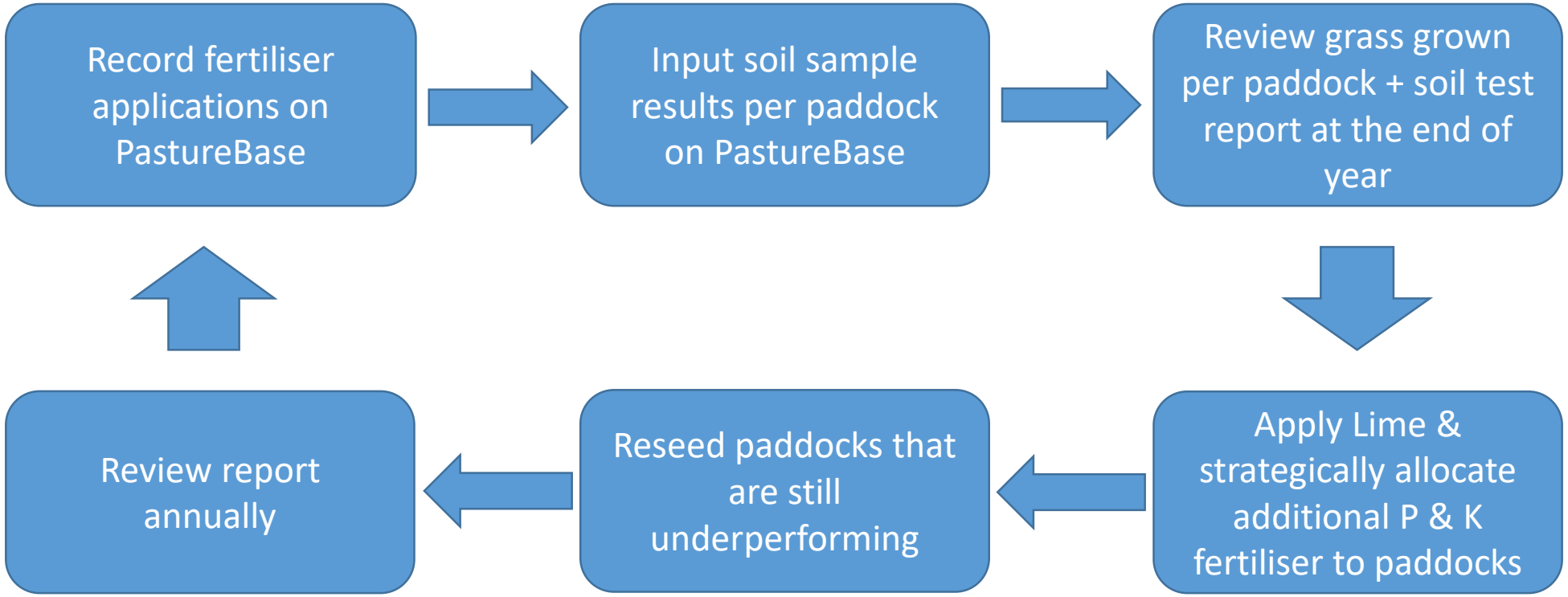
How to make PastureBase Ireland work for you



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Grassland Farmer of the Year 2020 Competition Awards Ceremony

Tuesday, 19th January | 2pm

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An Roinn Talmhaíochta, Bia agus Mara
Department of Agriculture, Food and the Marine

Register online at:
www.teagasc.ie/GFOTYawards

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Getting Familiar with PastureBase Ireland

Are you looking to begin your journey measuring grass with PastureBase Ireland?

Thursday, 4th February | 7pm

Join the Grass10 & PastureBase team on as they go through a step-by-step process of using PastureBase Ireland

Learn how to:

- Download the PastureBase Ireland app on your mobile
- Set up paddocks on your profile
- Enter a grass measurement on PastureBase Ireland and how to interpret the data
- Enter groups of grazing animals and correctly allocate grass
- Use Spring and Autumn rotation planners

To register visit *www.teagasc.ie/grass10*

Summary

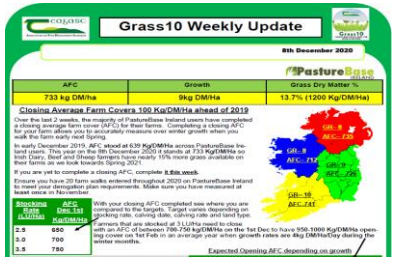
- Are you ready for the challenge that lower N will bring ?

- Use PastureBase Ireland to input fertiliser applied and soil sample results. The more data you have, the more improvements you can make over the coming years

- Aim for the low hanging fruit first

1) LESS
2) Summer Fertiliser & Protected Urea
3) Clover

- Read weekly Grass10 Newsletter for tips and updates throughout the year



Thank you for your attention!

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