

Growing Grass Using Less Nitrogen Fertiliser

Getting the best response from what you apply

Thursday, 20th January | 7pm

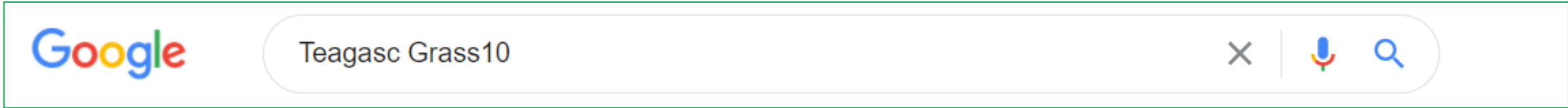
Join the Grass10 & PastureBase team as they discuss how to:

- Develop an effective spring fertiliser plan
- Reduce nitrogen usage during the summer
- Using Clover to reduce the need for chemical nitrogen
- Use PastureBase to record fertiliser usage per paddock

Kerry dairy farmer and 2020 Young Grassland Farmer of the Year, David O'Leary will join us on the night to discuss his efficient use of nitrogen fertiliser to grow a lot of high quality grass.

For more info visit www.teagasc.ie/grass10

Webinars



The image shows a screenshot of the Teagasc website. At the top left is the Teagasc logo with the text 'AGRICULTURE AND FOOD DEVELOPMENT AUTHORITY'. To the right are navigation links: 'About', 'Publications', 'Teagasc Daily', 'News & Events', and 'Contact'. Below these are five colored tabs: 'ANIMALS' (red), 'CROPS' (brown), 'ENVIRONMENT' (yellow), 'FOOD' (orange), and 'RURAL ECONOMY' (dark brown). A search bar is located to the right of the navigation links. Below the tabs is a breadcrumb trail: 'Crops > Grassland > Grass10 > Webinars'. A yellow arrow points from the 'Webinars' link in the breadcrumb to the 'Webinars' link in the left sidebar. The sidebar also contains 'Grazing Courses' and 'Grassland Farmer of the Year 2020'. The main content area features a yellow banner that says 'Presentation & Questions'. Below this is the heading 'Webinars' and a paragraph: 'Join the Teagasc Grass10 and PastureBase experts John Douglas, Micheal O'Leary and Joseph Dunphy with special guests on regular webinars covering various different aspects of grassland management'. A green button labeled 'REGISTER ONLINE' is at the bottom.

This image shows the content of a webinar. At the top, it says 'Wednesday, 9 December | 7pm'. The main heading is 'Achieving Grazing Excellence Webinar'. Below this is a video player interface for a video titled 'Achieving Grazing Excellence Webinar Reports on PBI'. The video player shows a thumbnail with various charts and graphs. To the right of the video player are icons for 'Watch later' and 'Share'. Below the video player are two green buttons: 'Capitalizing-on-PBI-Reports Presentation (pdf)' and 'Achieving Grazing Excellence Webinar Questions'. On the far right, there are three small video thumbnails showing participants in a virtual meeting.



Purpose of this webinar


- Developing an effective fertiliser plan for both heavy soils and dry soils
- Encourage you to use PastureBase to record all fertiliser & slurry applied in 2022
- Understanding how clover can help to reduce fertiliser usage during the summer months.
- Introduce NUE % (Nutrient Use Efficiency) and how to calculate it using PastureBase Ireland

Webinar Structure

- Response to Spring Nitrogen
- Dry free draining soil spring N Example
- David's Farm Performance for 2020
- David's Spring N Plan
- Using Clover to reduce N applied in the summer
- Using PastureBase desktop & app to record Slurry & fertiliser
- Calculating NUE%
- Grass10 Top Tips for 2022 to reduce fertiliser N



Response to Spring Nitrogen

- Value of Spring grass in a typical year is **17 cent** per Kg DM
- In 2022 due to high concentrate cost, Spring grass  **22 cent** per Kg DM
- UREA Price= 950 Euro/tonne= **€2.06 per Kg N**
- Protected UREA= 1000 Euro/tonne = **2.17 per Kg N**
- €2.06 per Kg N / .22 cent per Kg= **9-10 Kg response break even**



Moorepark Research on Spring N

2 scenarios-:

1) Application of (60 Kg per Ha) 48 units of Pro.Urea / Urea on 16th March

2) Apply 20 Kg N in early February and 40 Kg N on 16th March (60 Kg)

Which will grow more grass?

1. 60 Kg N (48 units) on 16th March gave a response of 14 Kg DM

60 Kg x 14 kg response= **840 Kg grass**

2. 20 Kg of N in early February gave a response of 11 kg DM

20 Kg x 11kg response = **220 Kg grass**

40 Kg N on 16th March gave us a response of 22 Kg DM

40 Kg x 22kg response= **880 Kg Grass**

220 + 880 = **1100 Kg DM/ha**



840 Kg grass DM grown with singular application compared to **1100 Kg** grass DM grown with the split application

Difference of 260 Kg DM/Ha- **What does this mean to me?**

Farmer stocked at 3 cows/ha on milking platform

$260 \text{ Kg grass} / 3 \text{ cows /ha} = \mathbf{86 \text{ Kg grass DM per cow}}$

$86 \text{ Kg per cow} / 7 \text{ Kg per cow per grazing} = \mathbf{6 \text{ days grass or 12 grazings}}$

Summary

- Split application of fertiliser even at high prices has a positive effect
- Carry over effect of the early N applied is substantial
- Target highest returning paddocks, optimum soil fertility, reseeded, dry , covers above 4-500Kg DM/Ha
- Keep an eye on the new Grass10 Newsletter for rainfall & soil temperatures to make best decision on applying chemical N



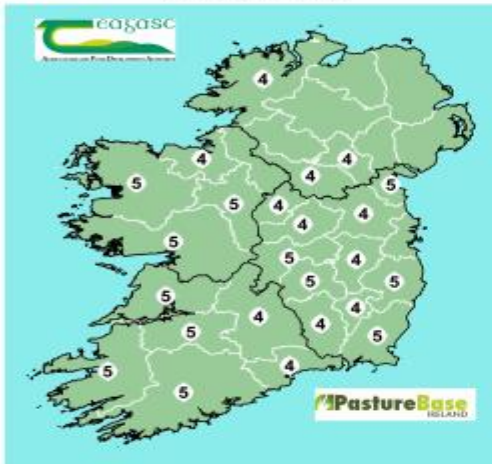
Grass10 Newsletter

179th Edition - 18th January 2022

PastureBase Ireland Figures



Grass growth predictions
Next week (kg DM/ha/day)



Predicted Grass Growth

Counties map showing predicted

Average soil temperature
Next week



Predicted Soil Temperatures

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Teagasc Grass10 Newsletter

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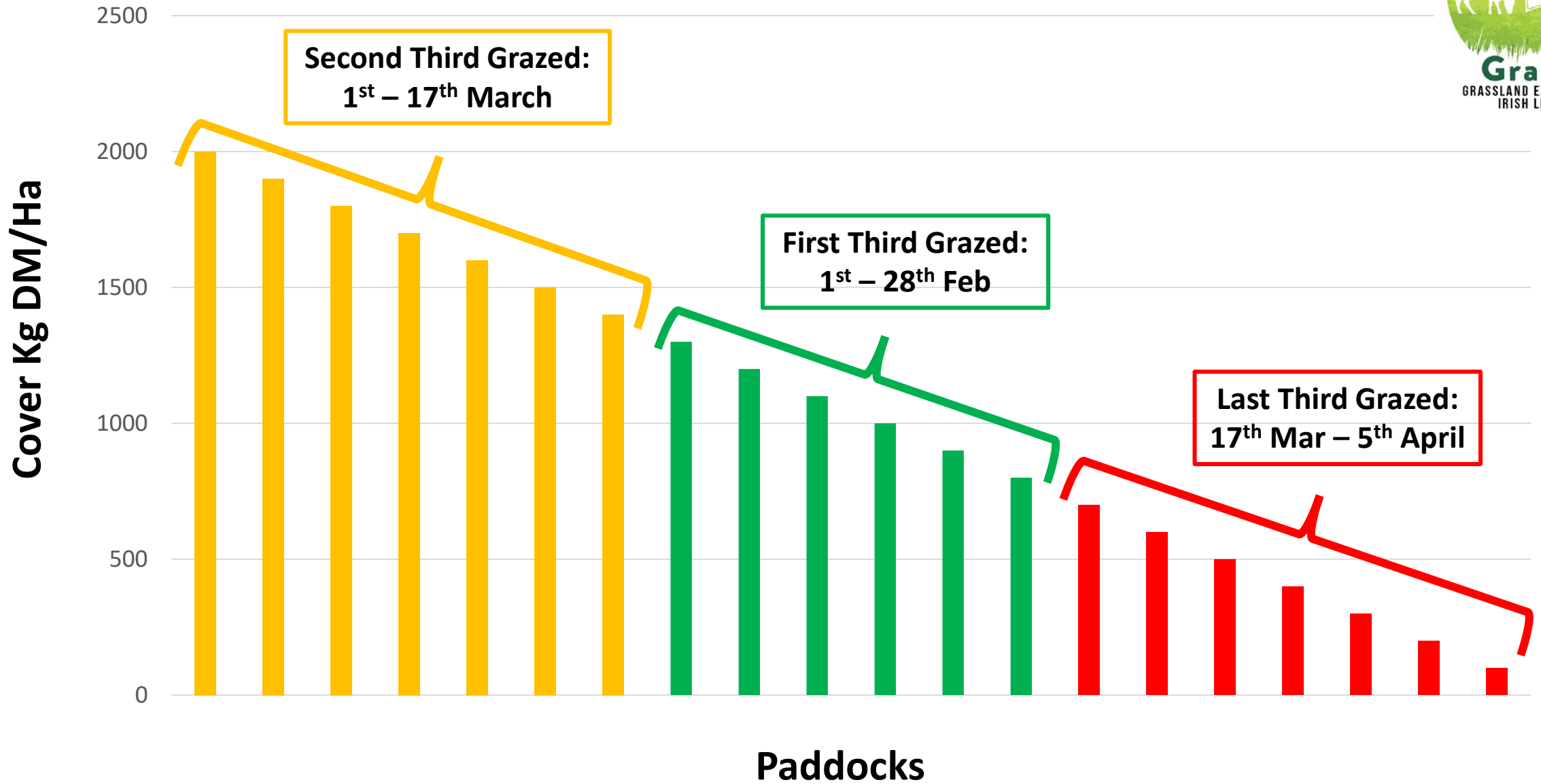
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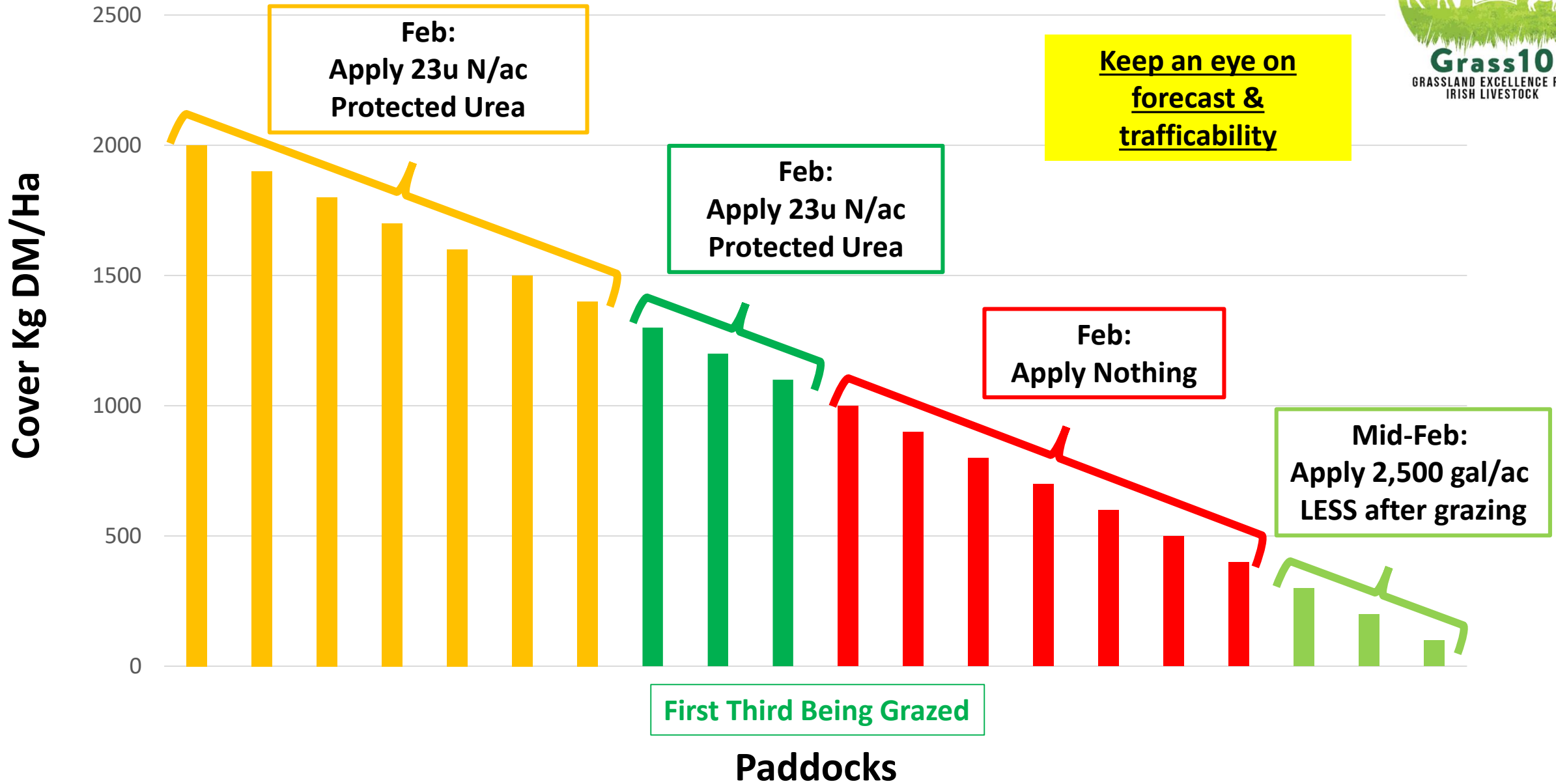


Dry soil Spring N plan

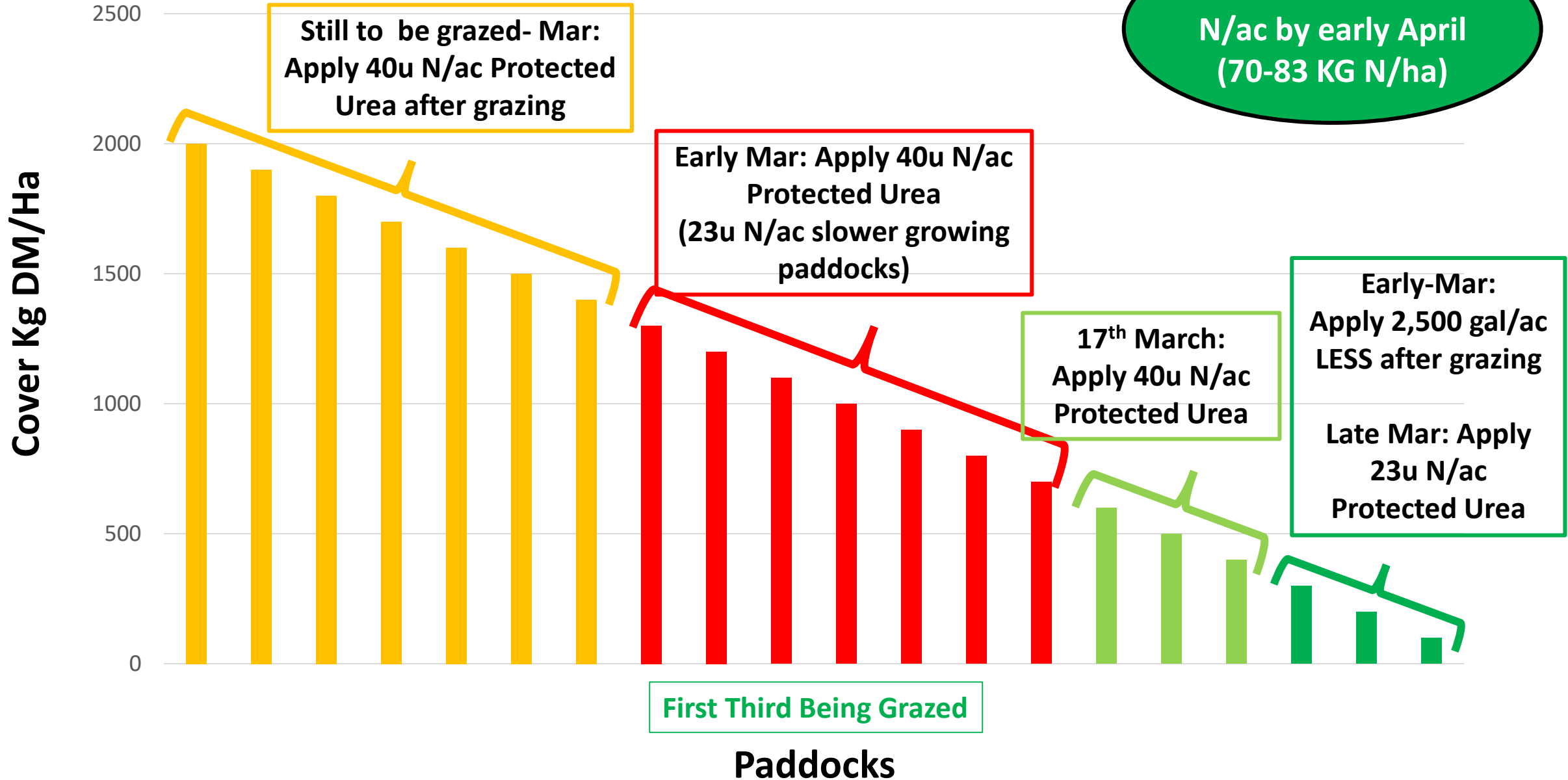
Spring Grazing Plan – When To Graze Your Paddocks



Spring Fertiliser Plan – FEBRUARY



Spring Fertiliser Plan - March



David O'Leary – 2021 Performance

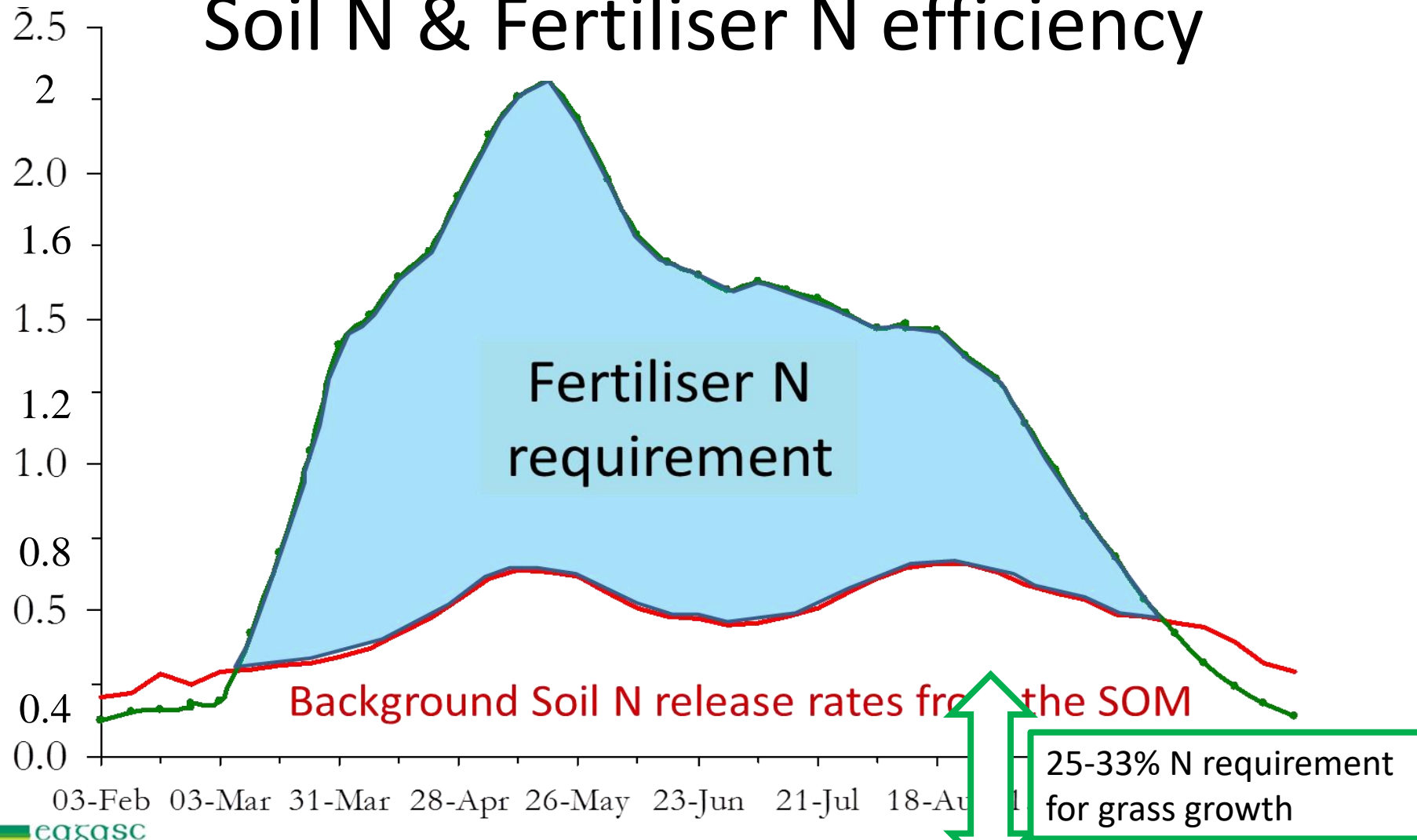


Annual Tonnage	14.5 T DM/ha
Grazing Yield	12.8 T DM/ha
No. Grazings Per Paddock	7.3
Silage Yield	1.7 T DM/ha
No. Silage Cuts Per Paddock	1
Pre-Grazing Yield	1500 Kg DM/ha
No. Farm Walks Per Year	37
Days at grass	253 (1 st Mar–9 th Nov)
Total N Kg/ha (Chem + Org)	215 Kg N/ha (200 + 15)
NUE (NFS Avg Dairy Farmer)	28% (24%)



Soil N & Fertiliser N efficiency

Units
N/acre/day



Wall, D.P., Johnstown Castle, January 2018

25-33% N requirement for grass growth



How much N does it take to grow a pre-grazing cover of 1,400 kg DM/ha?



- Summer grass crude protein = 17 to 22%: Average 19.5% C.P.
- Convert Crude protein to %Nitrogen= $CP\% \div 6.25$
- $19.5\% \text{ crude protein} \div 6.25 = 3.1\%N$

How much N does it take to grow a pre-grazing cover of 1,400 kg DM/ha?



- 1400 kg DM/ha grass \times 3.1%N = 43 kg N/ha
- 43 kg N/ha \times 0.8 = 34 units/acre
- Soil, dung/urine, N last application = 0.5 units N/day
 - 11 units N/acre in 20 day rotation
- 34 units N/acre - 11 units N/acre = 23 units N fertiliser/acre

🎯 1 unit N/day rule

🎯 Match units N/acre after cows to rotation length



Nitrogen fertiliser application strategy

Rotation/Date	250 kg N/ha	150 kg N/ha
Mid-late January	28	28
Mid-March	30	28
15 th April (2 nd rot)	30	28
6 th May (3 rd rot)	30	15
27 th May (4 th rot)	20	8
17 th June (5 th rot)	20	8
8 th July (6 th rot)	20	8
29 th July (7 th rot)	20	8
19 th August (8 th rot)	20	8
Mid-September	30	15
Total	250 kg	150 kg

Parlour washings
or light slurry
with LESS can be
an option here



Grass10 Top Tips to Grow Grass with Less Chemical N:

1. Soil test & increase optimum soil fertility
2. Create a spring fertiliser plan (use maps & wedge)
3. Test slurry & apply it with LESS in spring
4. Begin recording fertiliser/slurry/lime applications on PastureBase
5. Apply 0.75 – 1u N/ac during the mid-season (Apr-Aug)
6. Clover paddocks – utilise N-fixing potential (half-rate in mid-season)
7. Reseed for better response to N
8. Use grazing targets to grow & utilise more grass (increase output)
9. Calibrate fertiliser spreader & ensure correct slurry rates
10. Review annual tonnage & apply N based on yield potential in paddock

Thank you for your attention!



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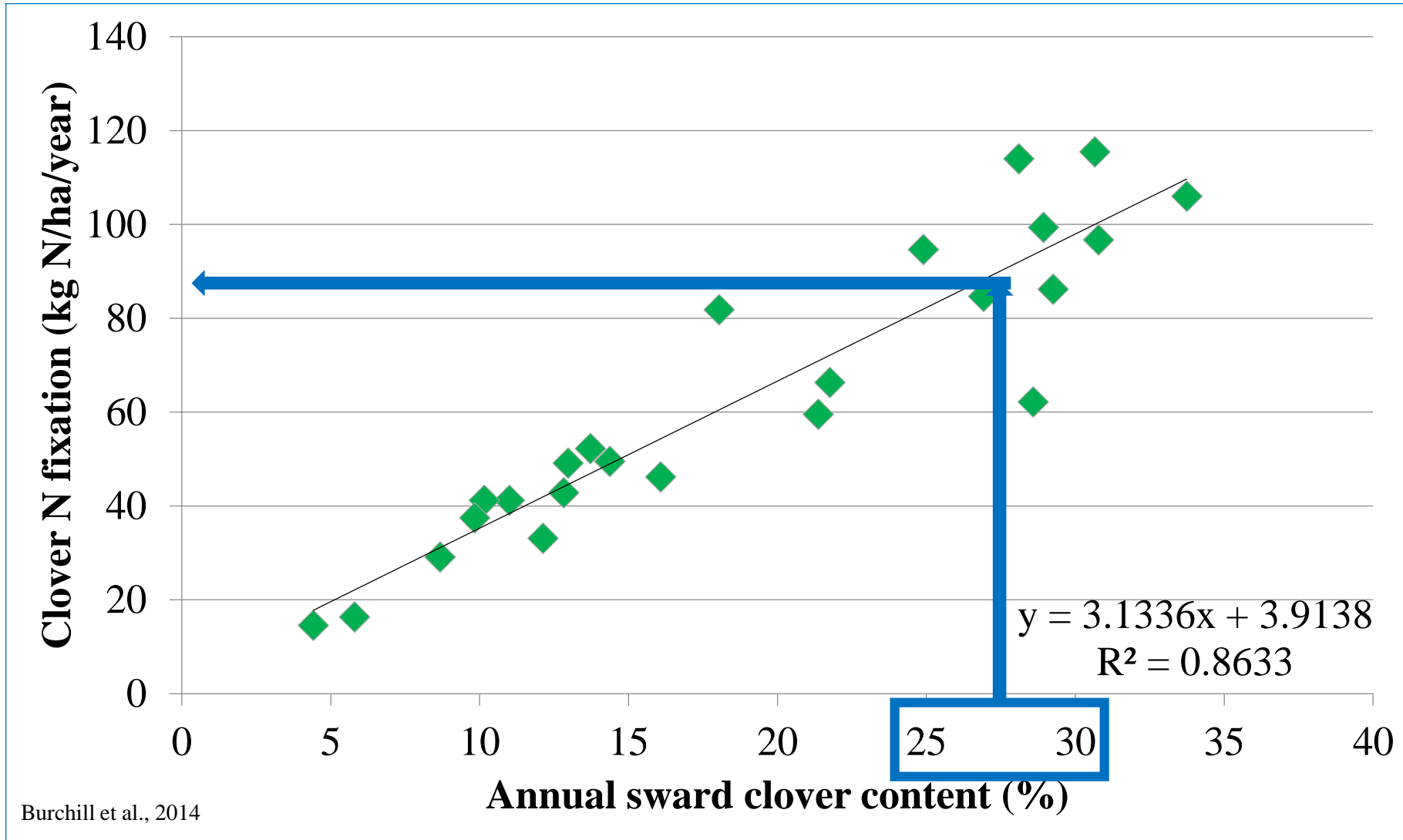
An Roinn Talmhaíochta,
Bia agus Mara
Department of Agriculture,
Food and the Marine

IRISH FARMERS JOURNAL

PastureBase
IRELAND

AIB

Importance of sward clover content



Important to have the clover % before dropping the Nitrogen substantially or animal performance will suffer