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

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Presentation & Questions

- Grazing Courses
- Webinars
- Grassland Farmer of the Year 2020
- Grassland Farmer of

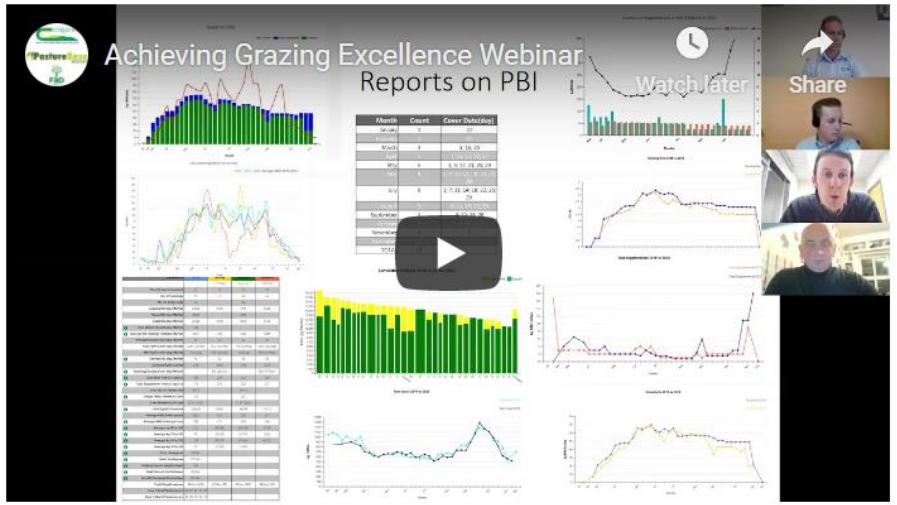
Webinars

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

REGISTER ONLINE

Wednesday, 9 December | 7pm

Achieving Grazing Excellence Webinar



Capitalizing-on-PBI-Reports Presentation (pdf)

Achieving Grazing Excellence Webinar Questions

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

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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

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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

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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?**

<u>Farmer stocked at 3 cows/ha on milking platform</u>

260 Kg grass/ 3 cows /ha = **86 Kg grass DM per cow**

86 Kg per cow/ 7 Kg per cow per grazing= **6 days grass or 12 grazings**

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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

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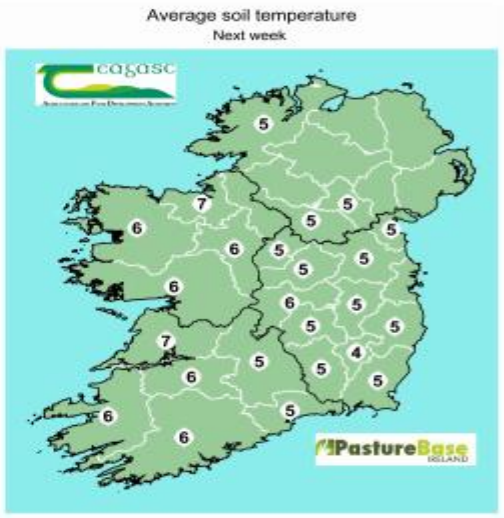
Grass10 Newsletter

179th Edition - 18th January 2022

PastureBase Ireland Figures



Predicted Grass Growth

Counties map showing predicted

Predicted Soil Temperatures

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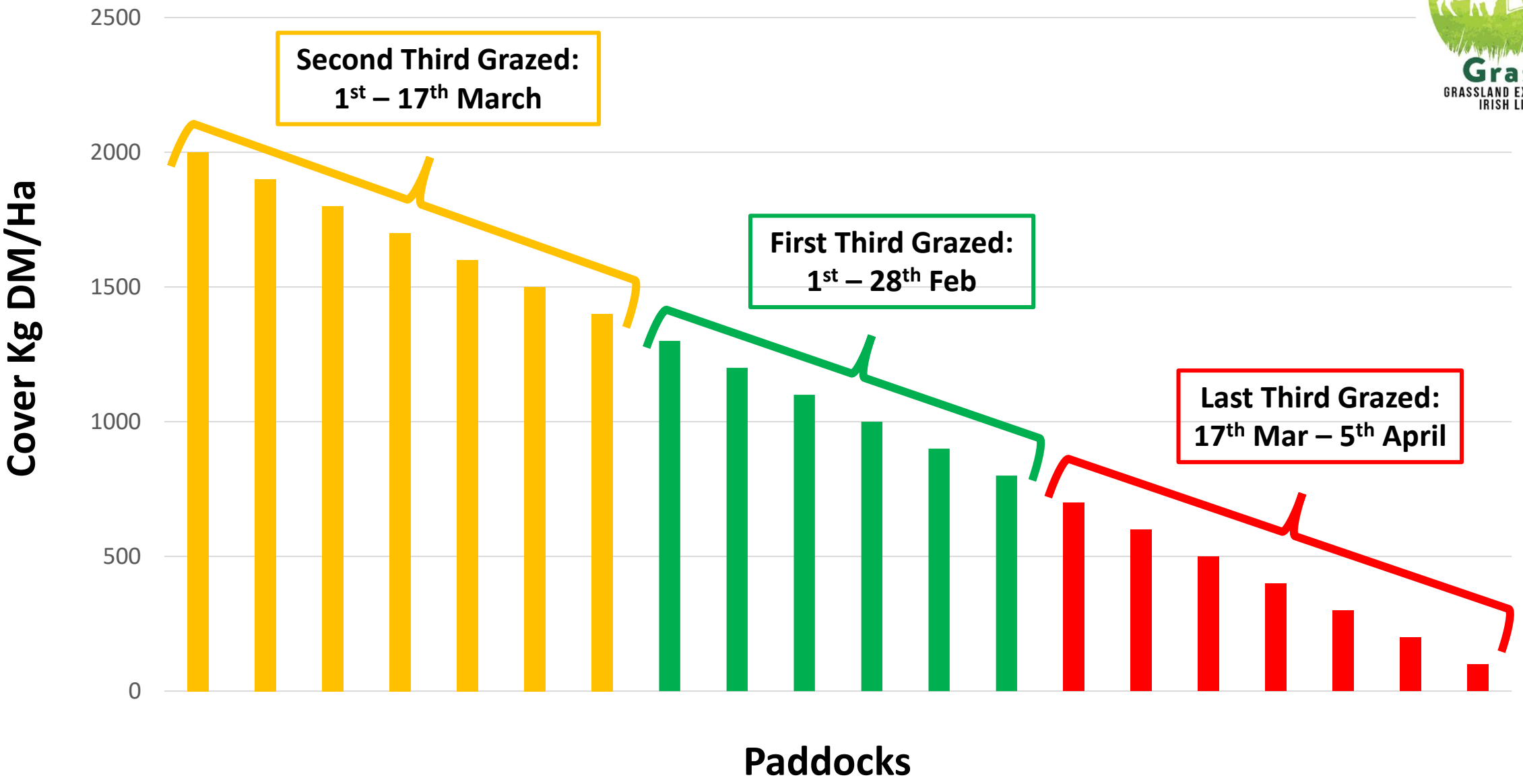
Dry soil Spring N plan

Spring Grazing Plan – When To Graze Your Paddocks



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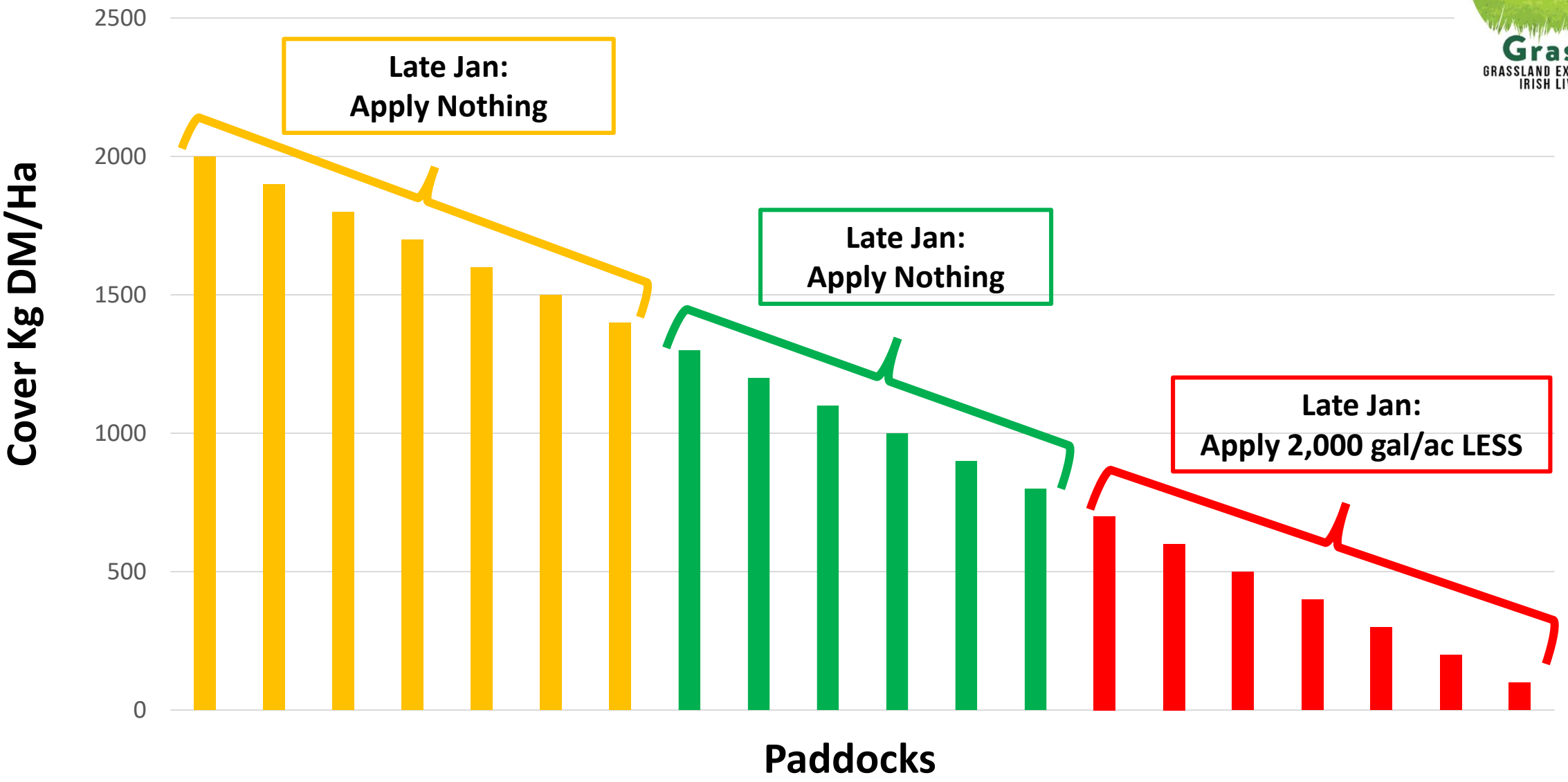
Spring Fertiliser Plan – LATE JAN



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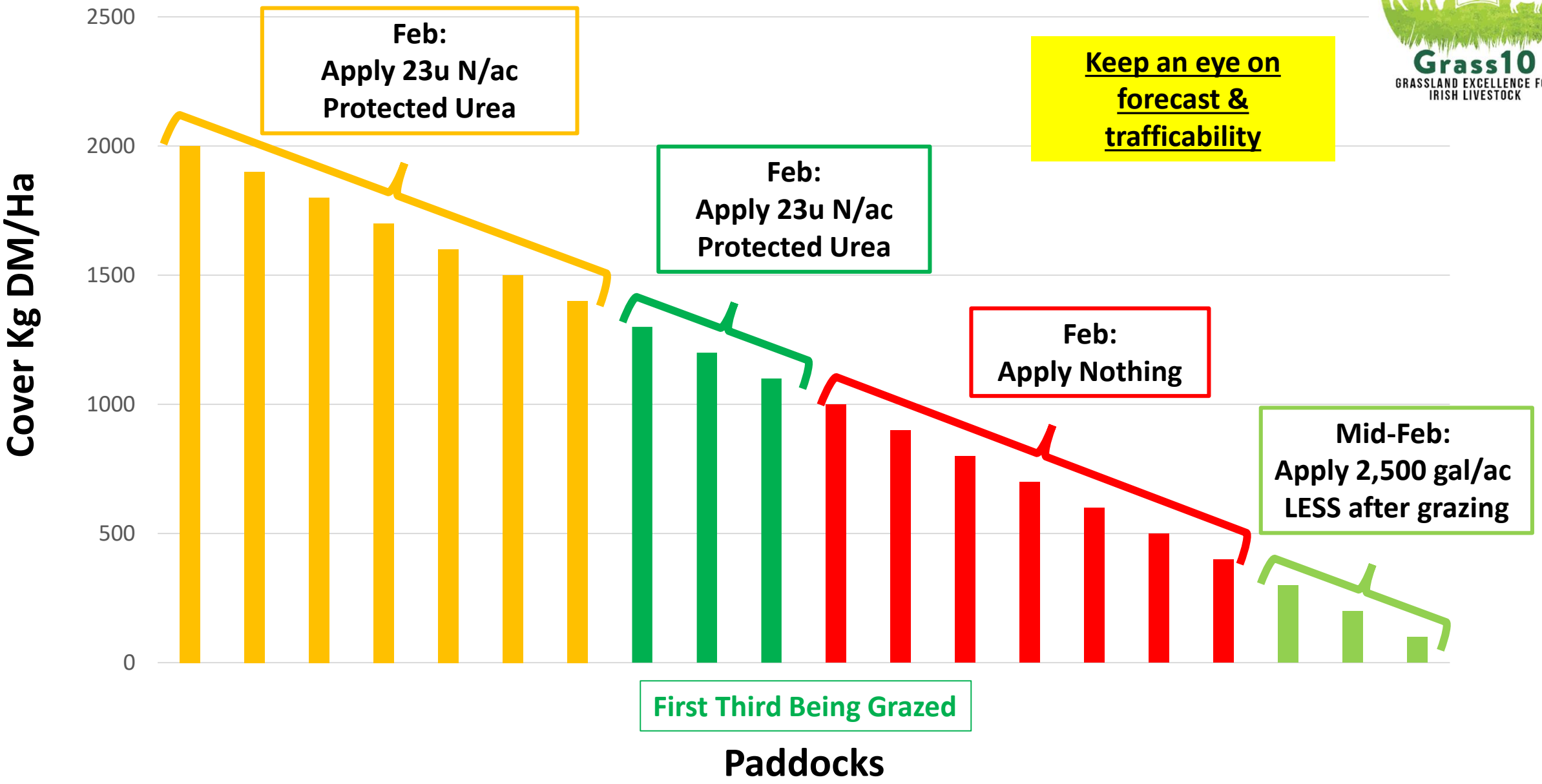
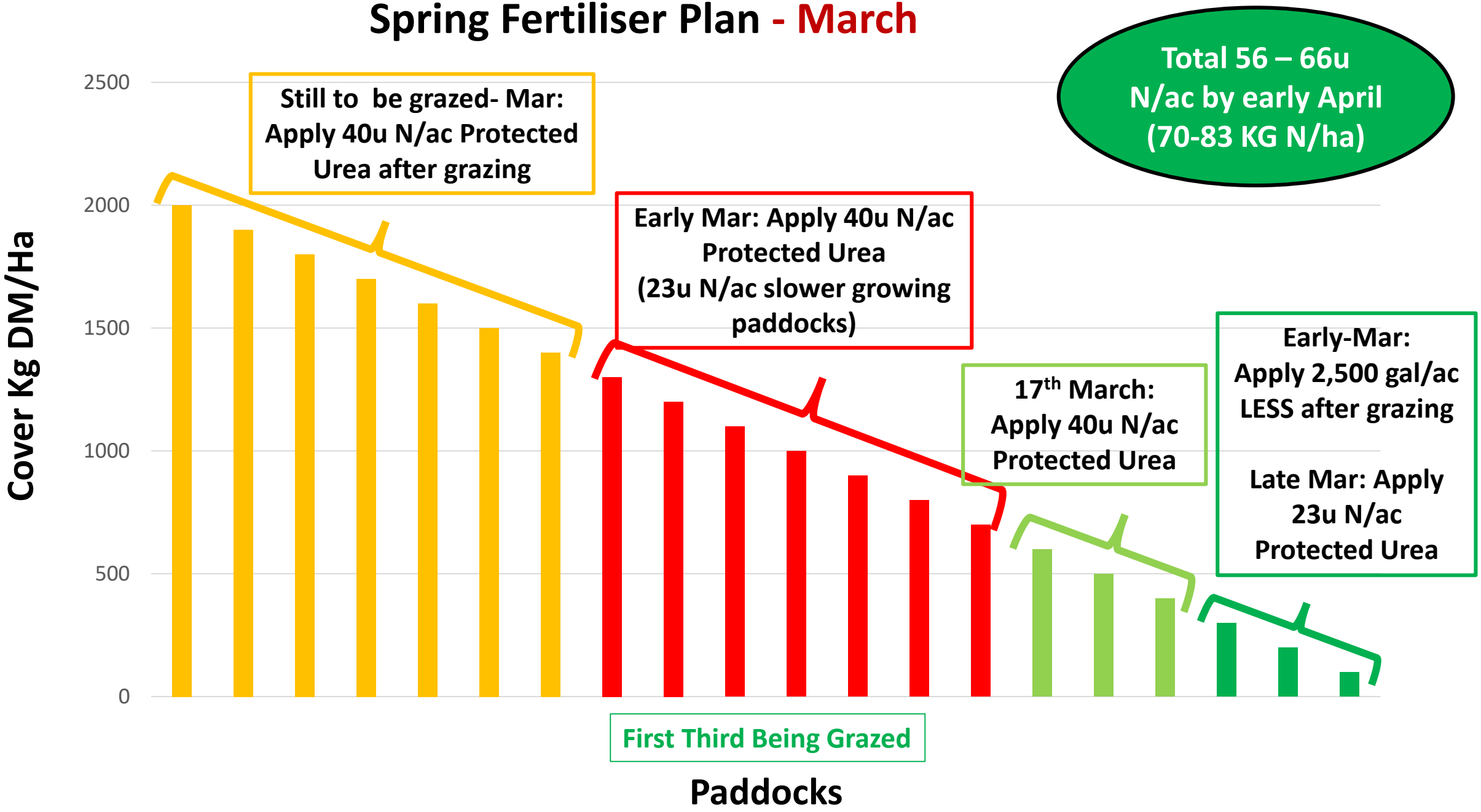
Spring Fertiliser Plan – FEBRUARY



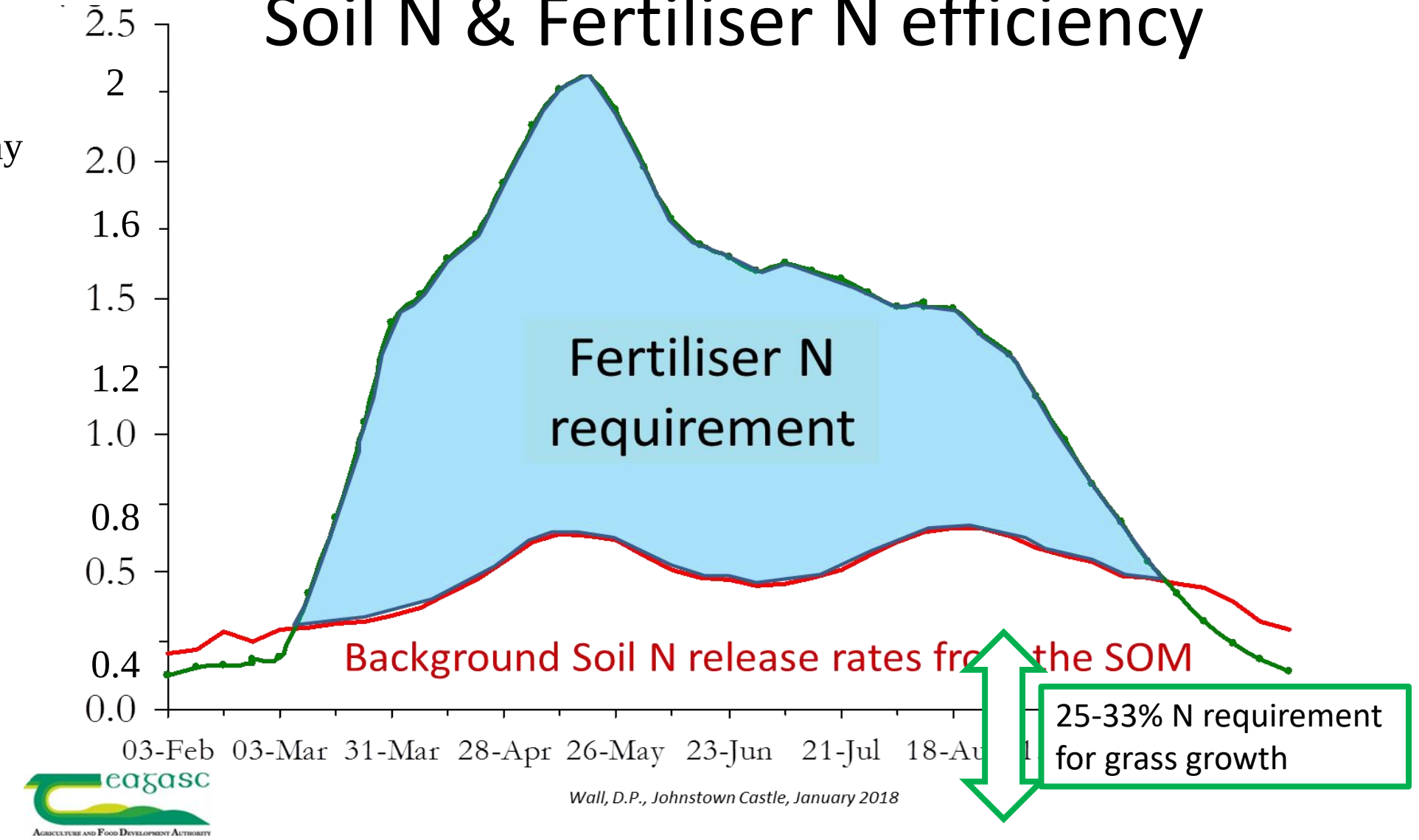
Spring Fertiliser Plan - March



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 (1st Mar–9th 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



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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% ÷ 6.25
- 19.5% crude protein ÷ 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 × 3.1%N = 43 kg N/ha
- 43 kg N/ha × 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
15th April (2nd rot)	30	28
6th May (3rd rot)	30	15
27th May (4th rot)	20	8
17th June (5th rot)	20	8
8th July (6th rot)	20	8
29th July (7th rot)	20	8
19th August (8th 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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An Roinn Talmhaíochta, Bia agus Mara
Department of Agriculture, Food and the Marine

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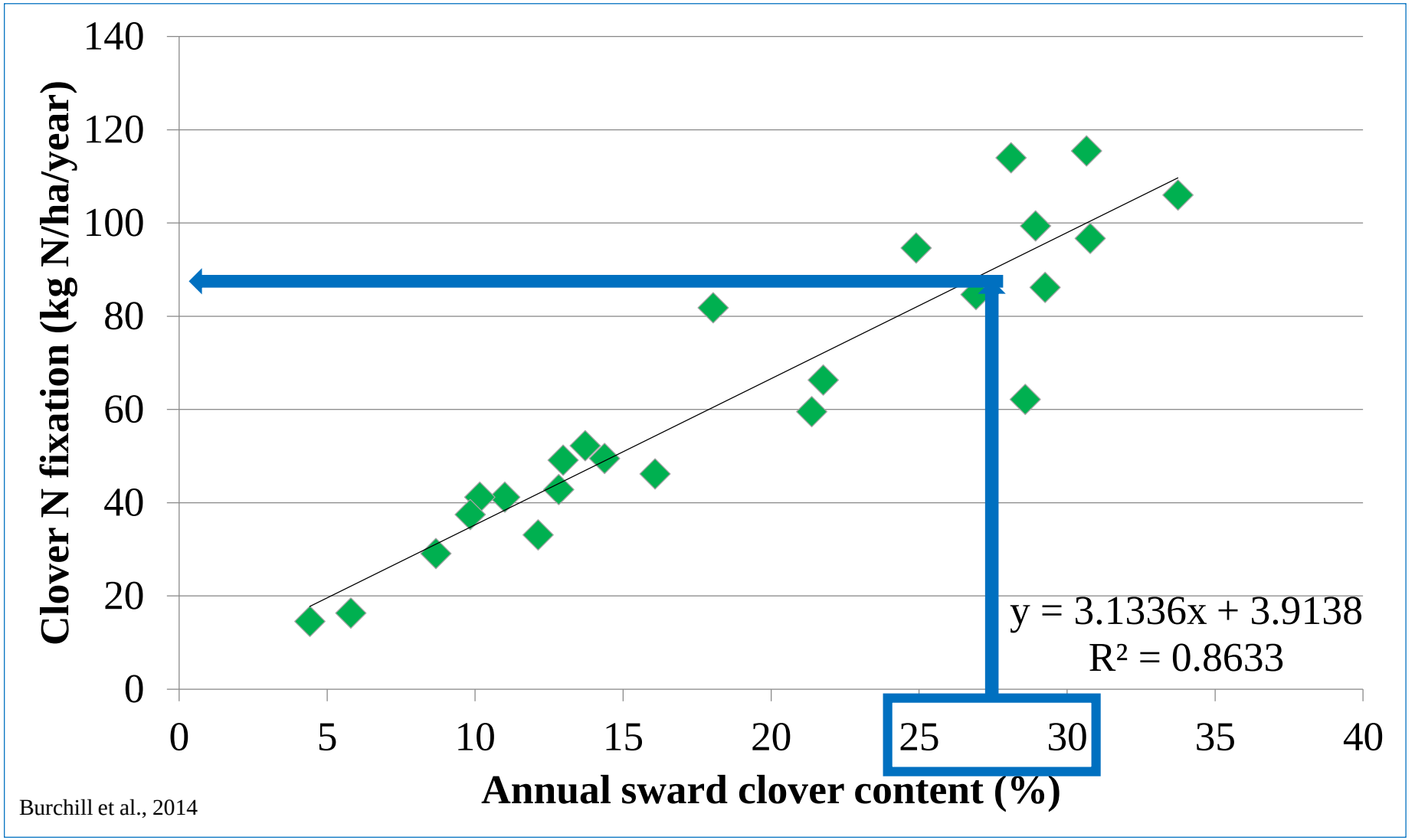
Importance of sward clover content



Burchill et al., 2014

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