

Increasing N use efficiency: Protected urea and LESS

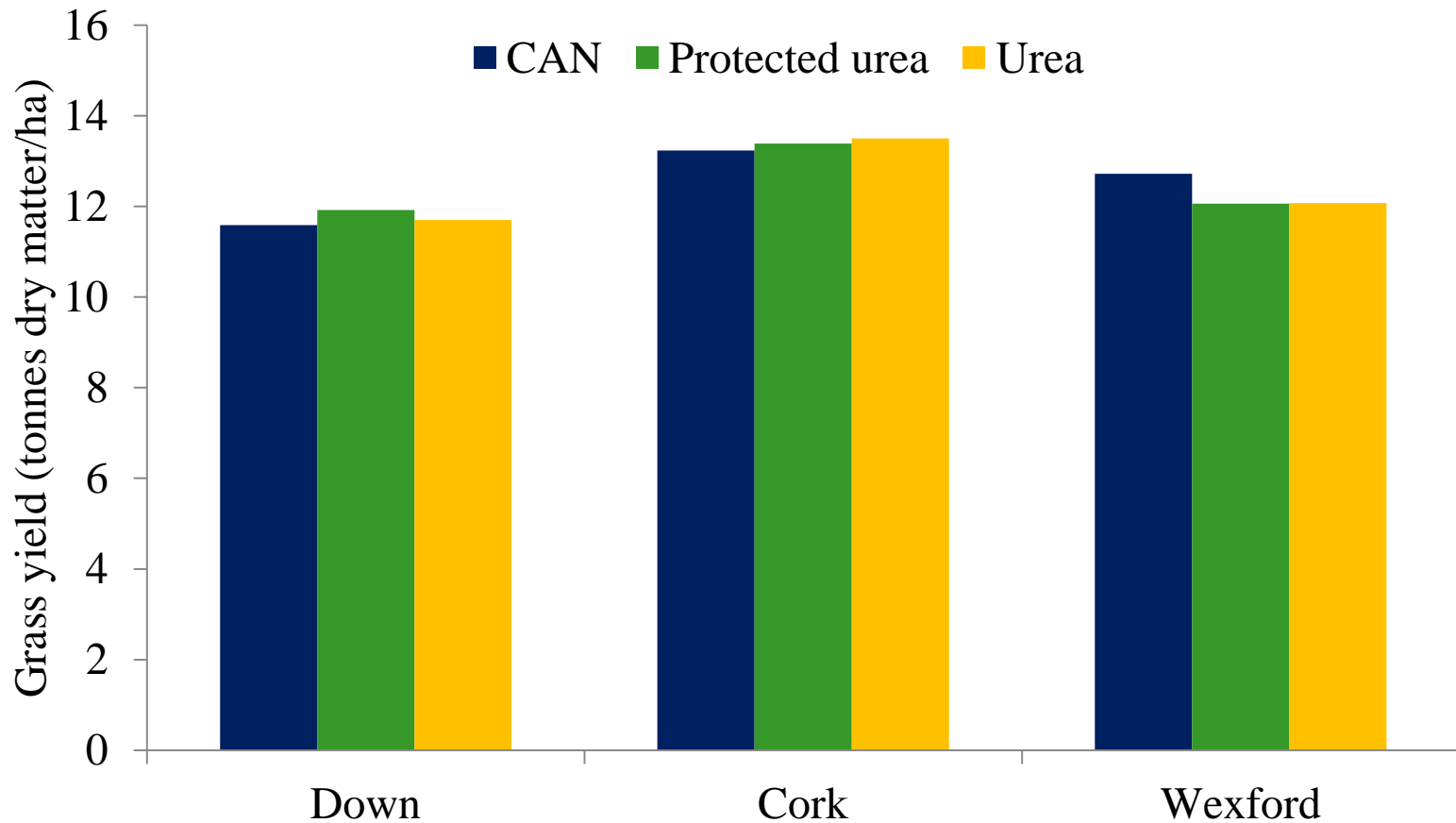
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Outline

- Protected urea
- Low emissions slurry spreaders
- How to use on dairy farms?

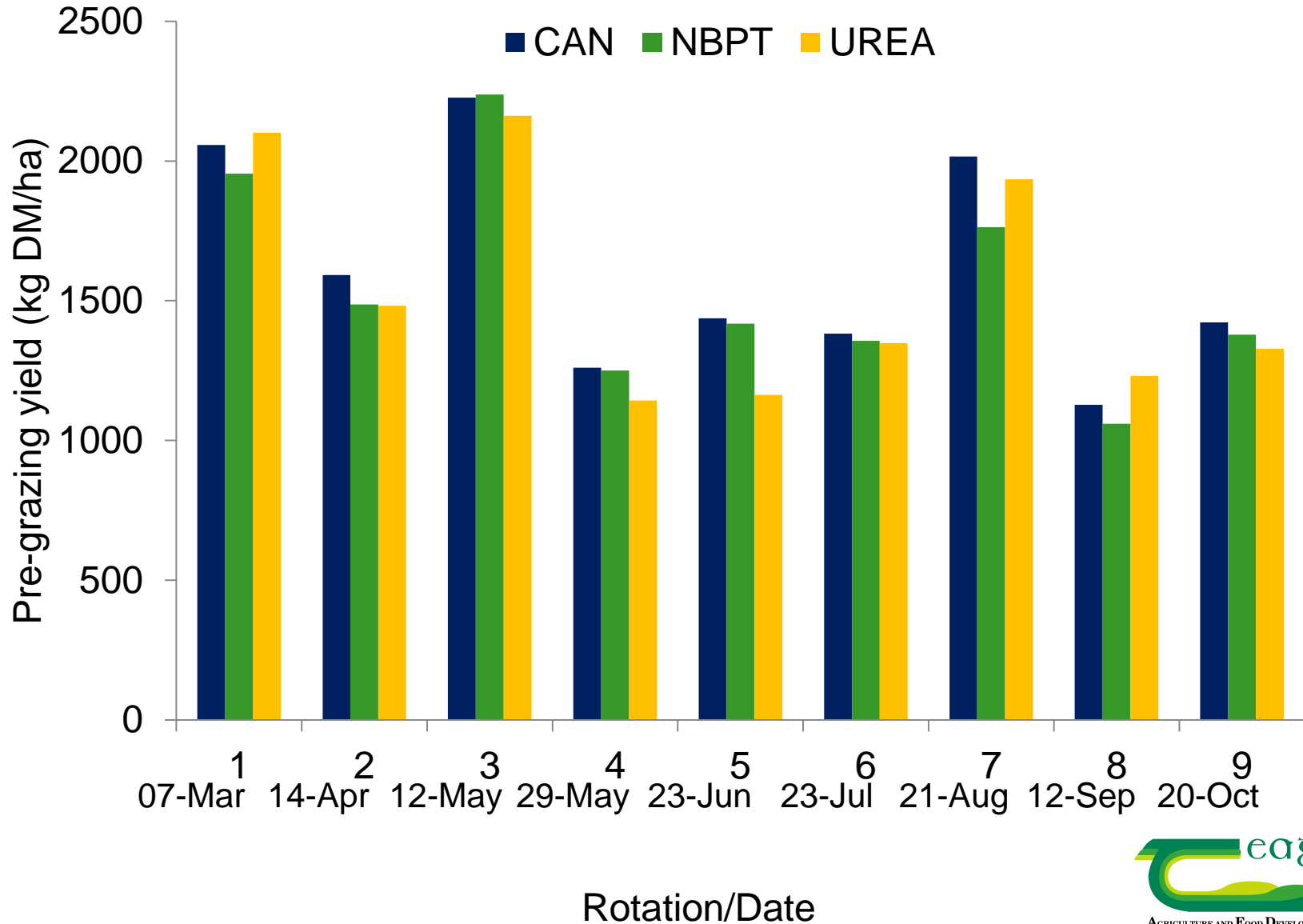
Grass yield: Plots

2 years x 5 applications x 3 sites x 5 N rates = 150 side by side comparisons



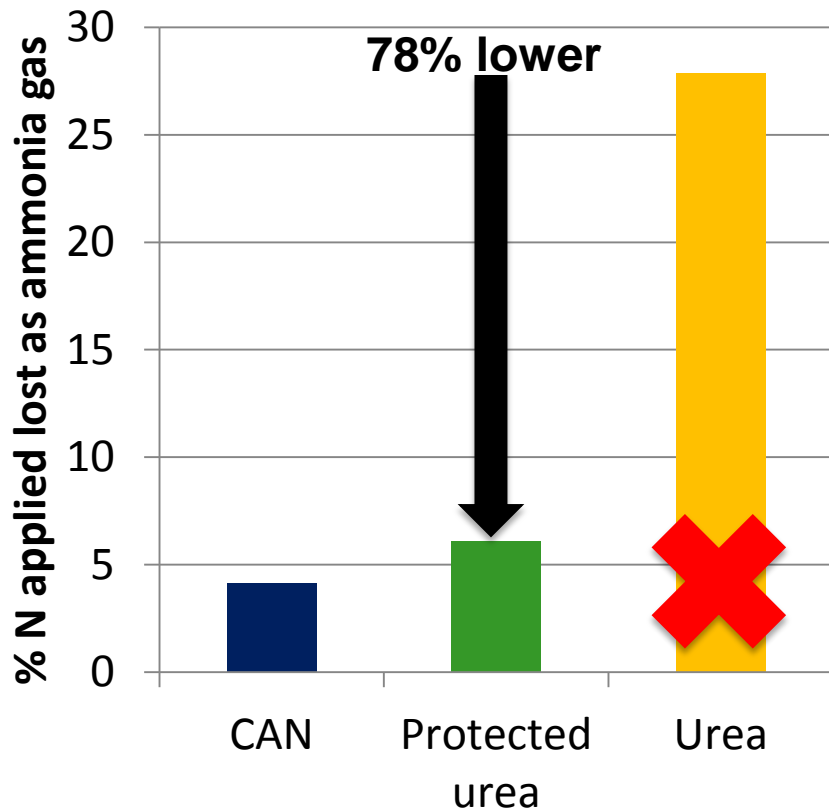
Grass yield: Grazing

1 year × 9 applications × 2 sites × 2 N rates

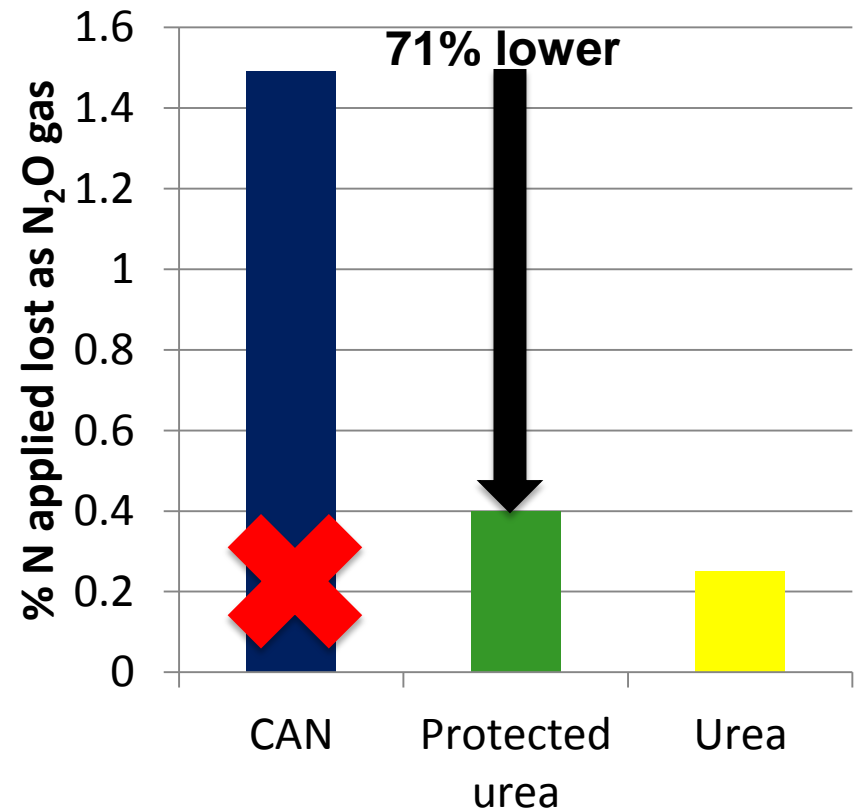


Emissions

Ammonia Emissions

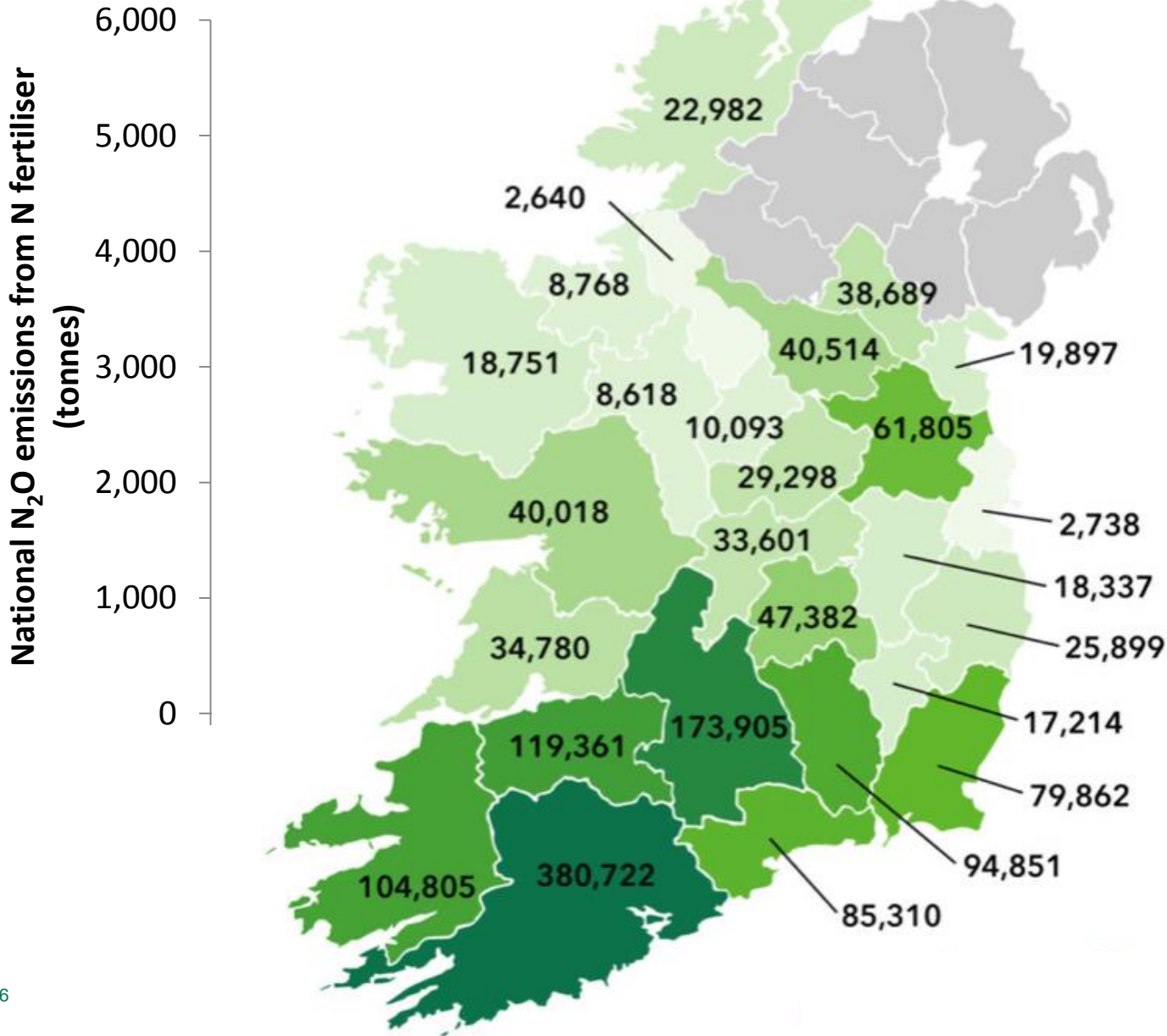


GHG emissions



N

Dairy cow numbers county by county



ons

25% lower

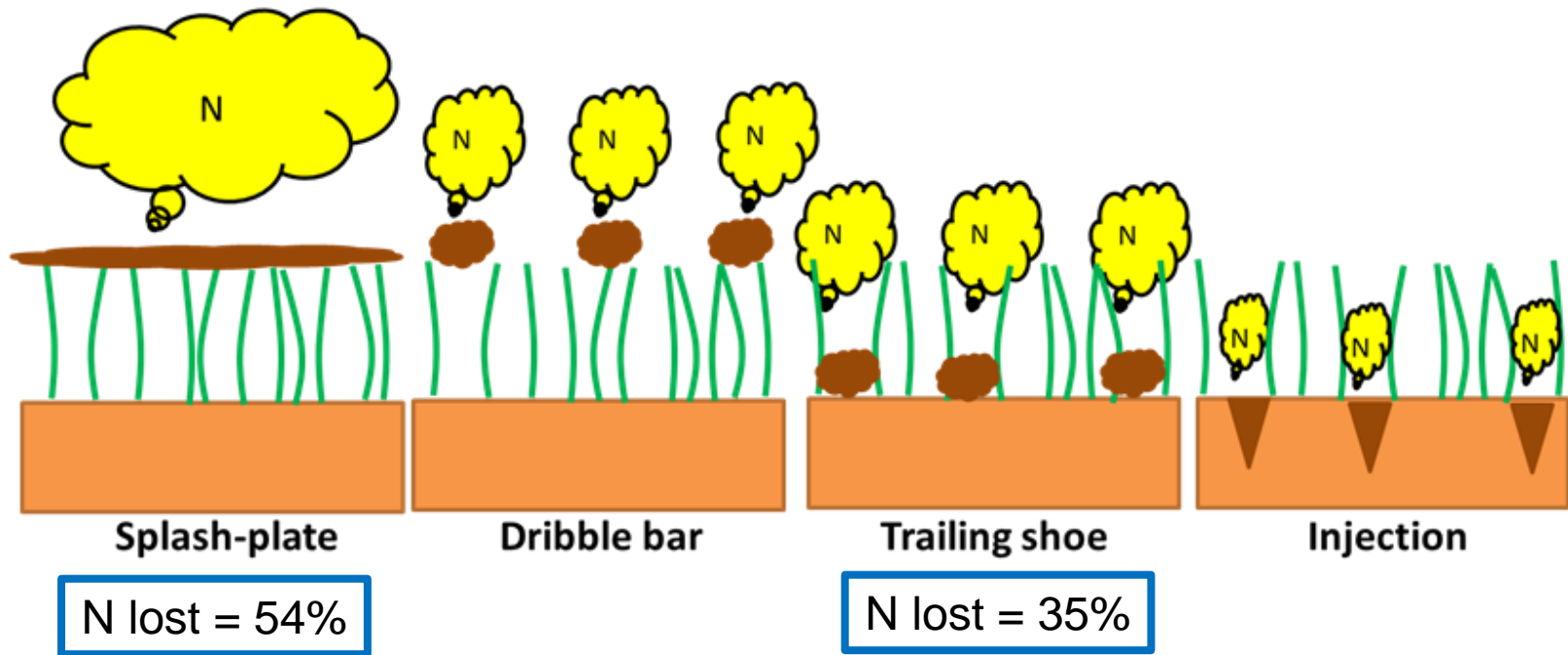


25% reduction in national fertiliser N use

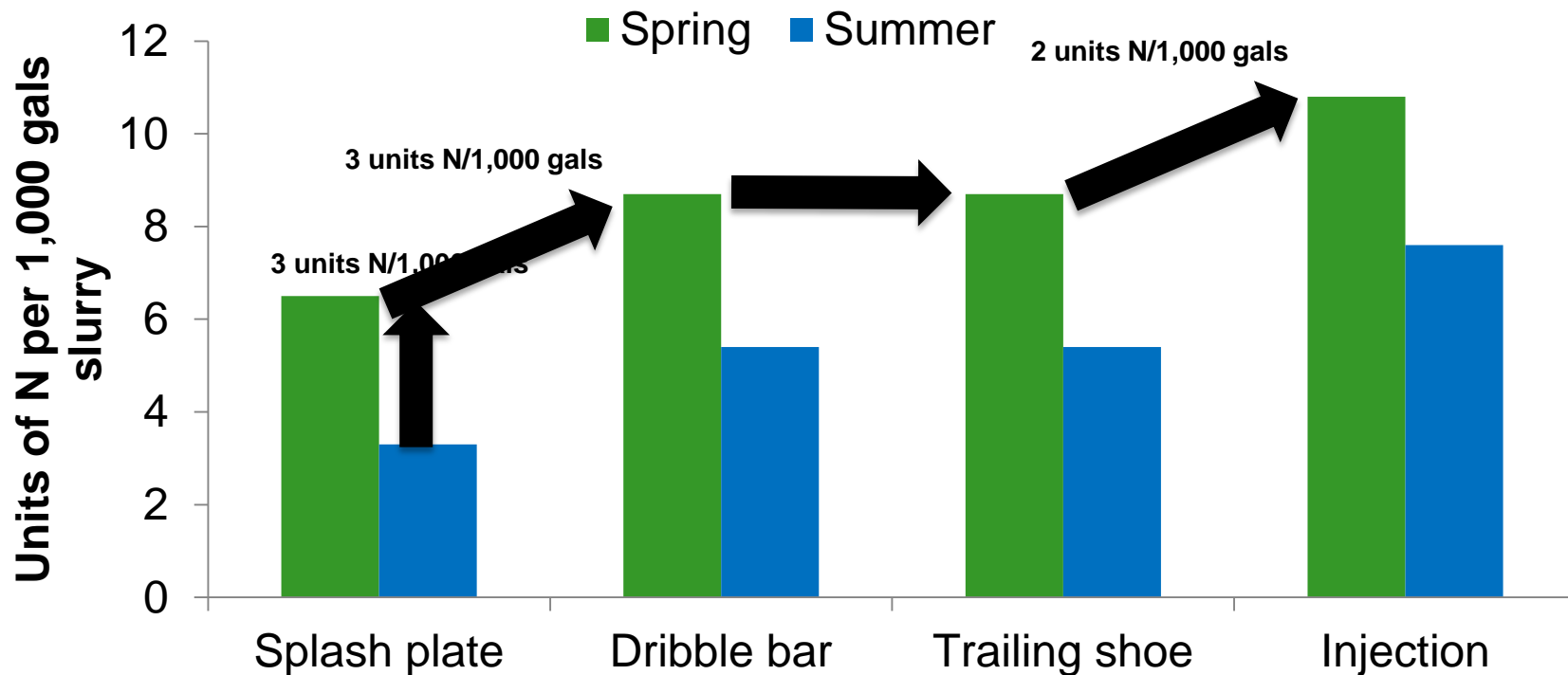
Protected urea ticks all the boxes

Fertiliser N type	N content	€ Cost	Annual grass yield	GHG emissions	Ammonia emissions	Nitrate leaching Spring
Urea	46%	€0.85/kg N (€390/t)	✓	✓	✗	✓
Protected urea	46%	€0.95/kg N (€437/t)	✓	✓	✓	✓
CAN	27%	€1.05/kg N (€280/t)	✓	✗	✓	✗

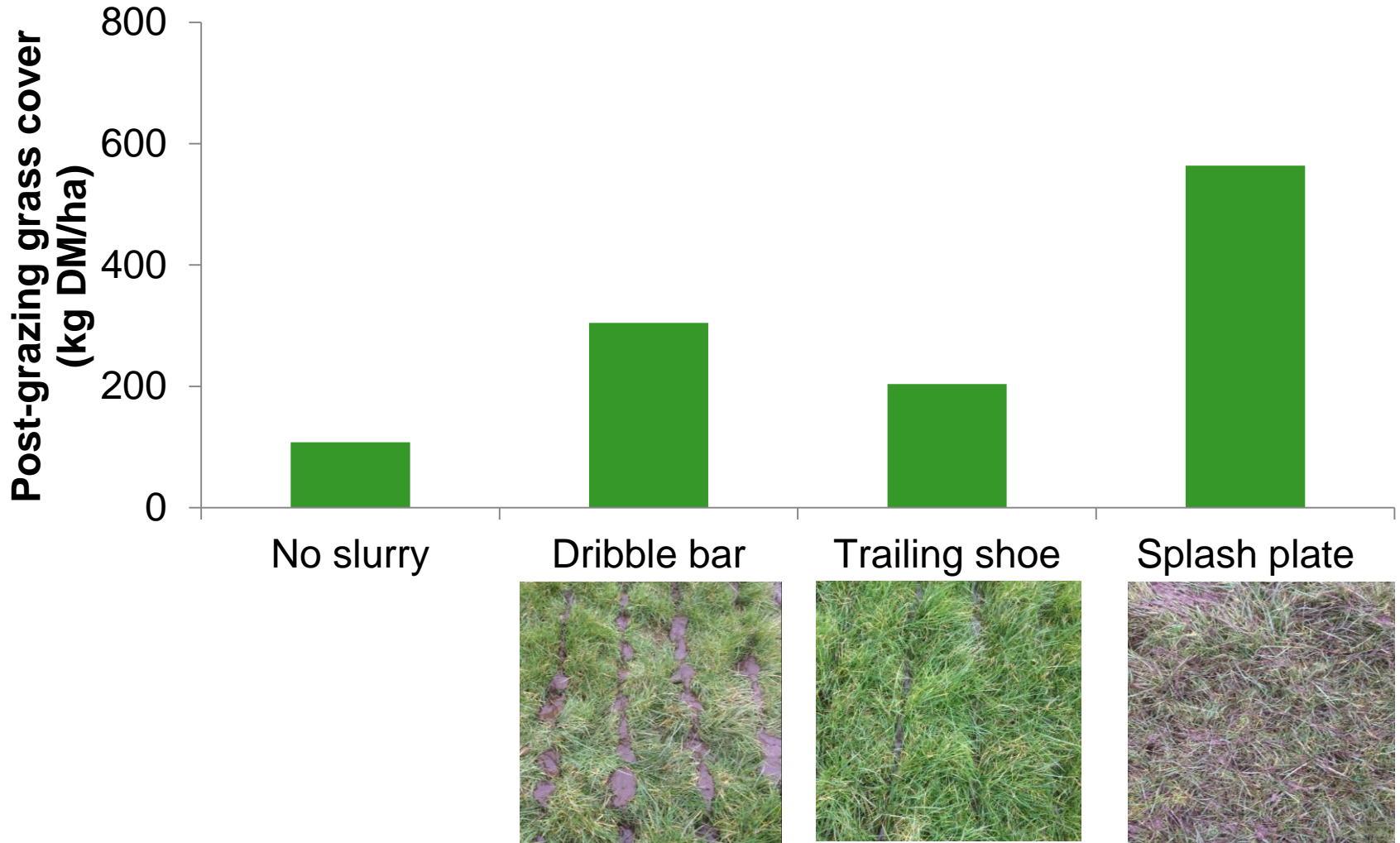
Low emissions slurry spreaders



Slurry N values



Grass contamination



Using Protected Urea and LESS

	1 st Cut silage	2 nd Cut silage	1 st N application (Late Jan/Feb)	1 st N application (Late Jan/Feb)	21 day rotation in summer
Cattle Slurry	3,000 gal/ac LESS				
Protected urea product	2 bags 38% N + 7.5%S/ac				
Total N applied	103 units N/ac 128 kg N/ha				

Take home messages

- Use protected urea
- Use more LESS
- Account for the N in slurry