Utilising N well and minimising losses

ORC GreenGrass project webinar

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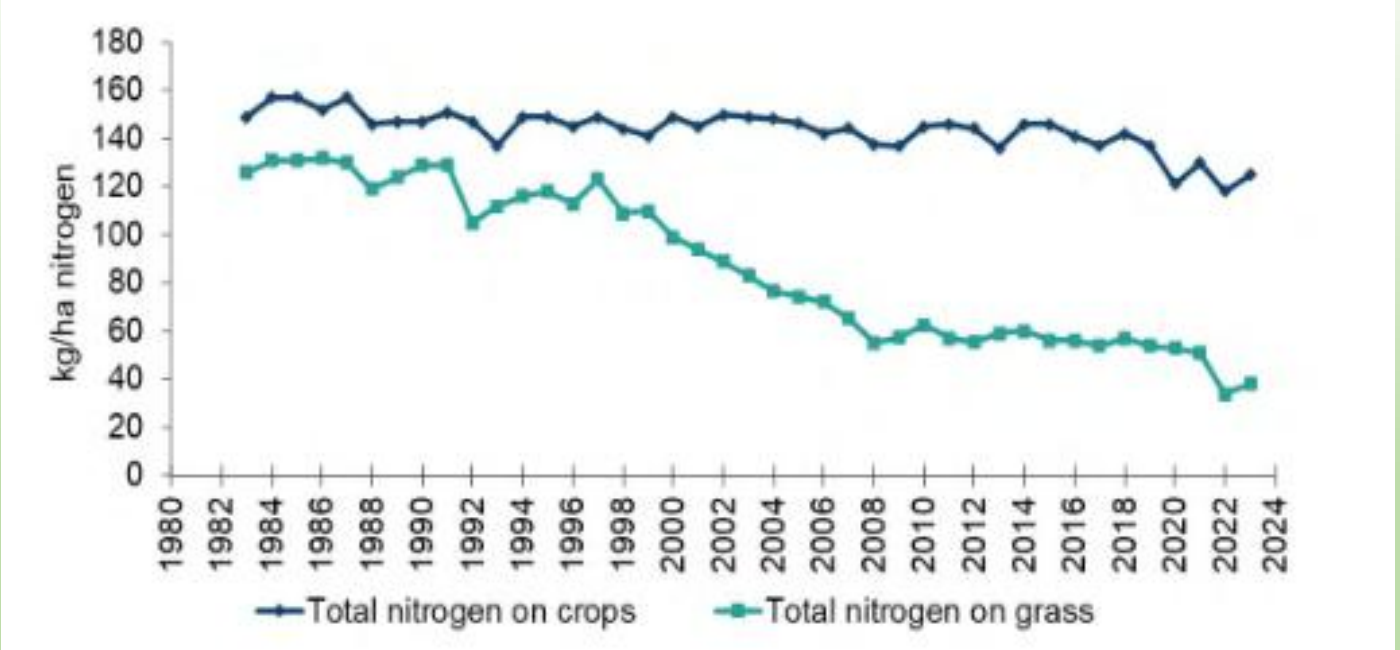
Trend in fertiliser use is down

Average field rate (kg/ha)

	Straight nitrogen	Compound nitrogen	Total nitrogen	Total phosphate	Total potash	Total sulphur
2019	103	70	93	21	29	33
2020	108	67	96	22	31	33
2021	95	66	87	20	28	32
2022	91	58	80	18	25	32
2023	101	62	88	20	26	37

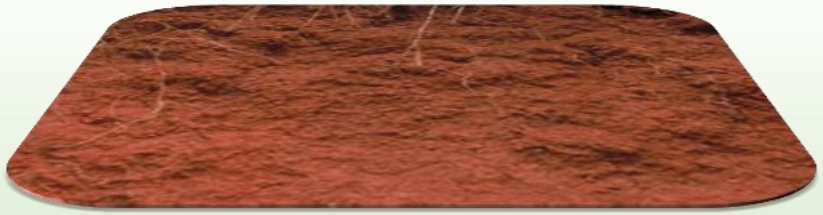
And it's a long-term pattern



… but does it always mean it's used to its optimum?

The basics!

Know what you have, know what you need

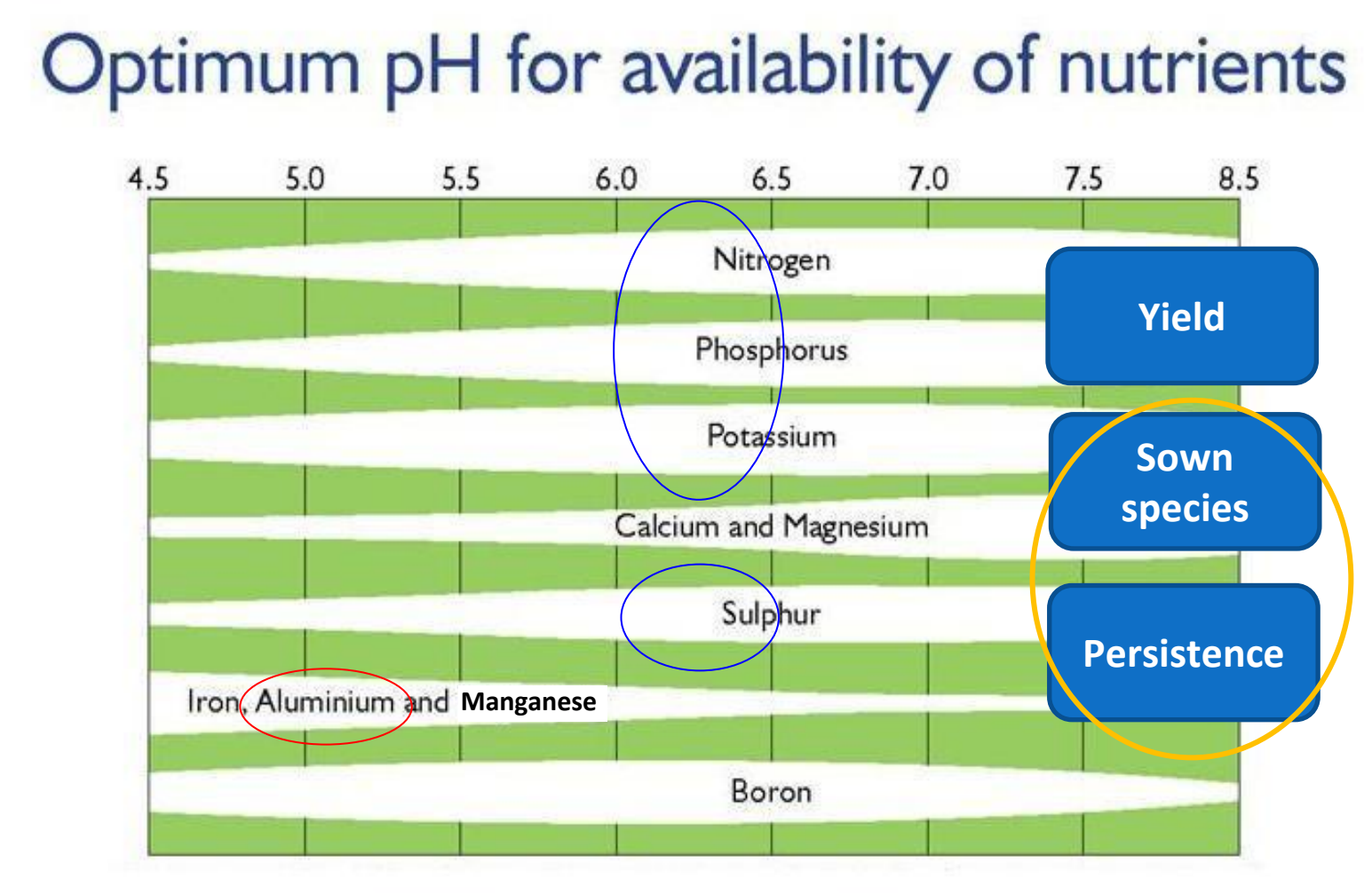


Soil test results

Optimum levels (grass):

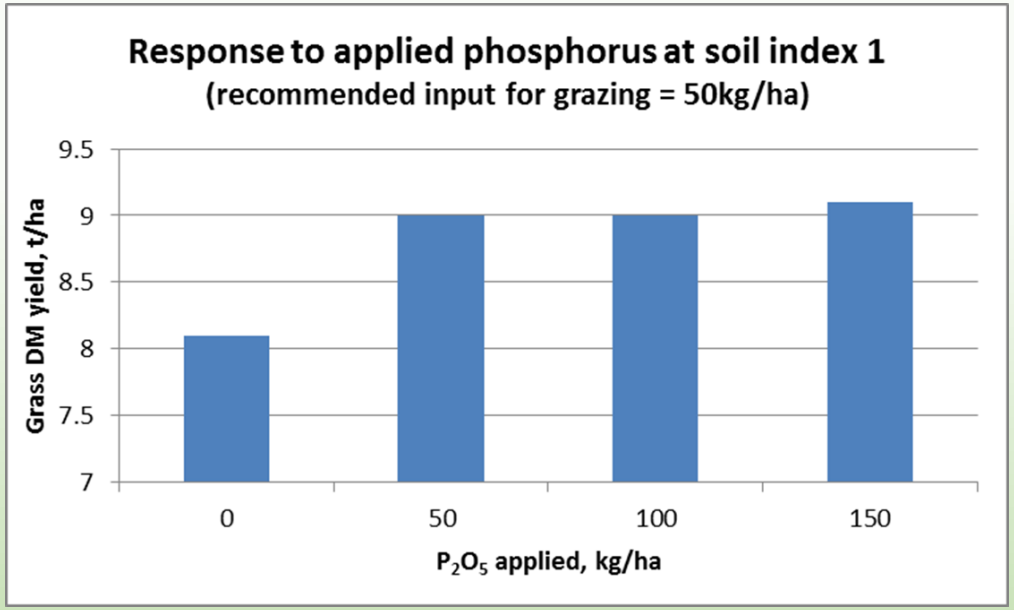
P index 2
K index 2-
Mg index 2
pH 6.0 (target 0.2 higher) (5.3 peat)

pH is important



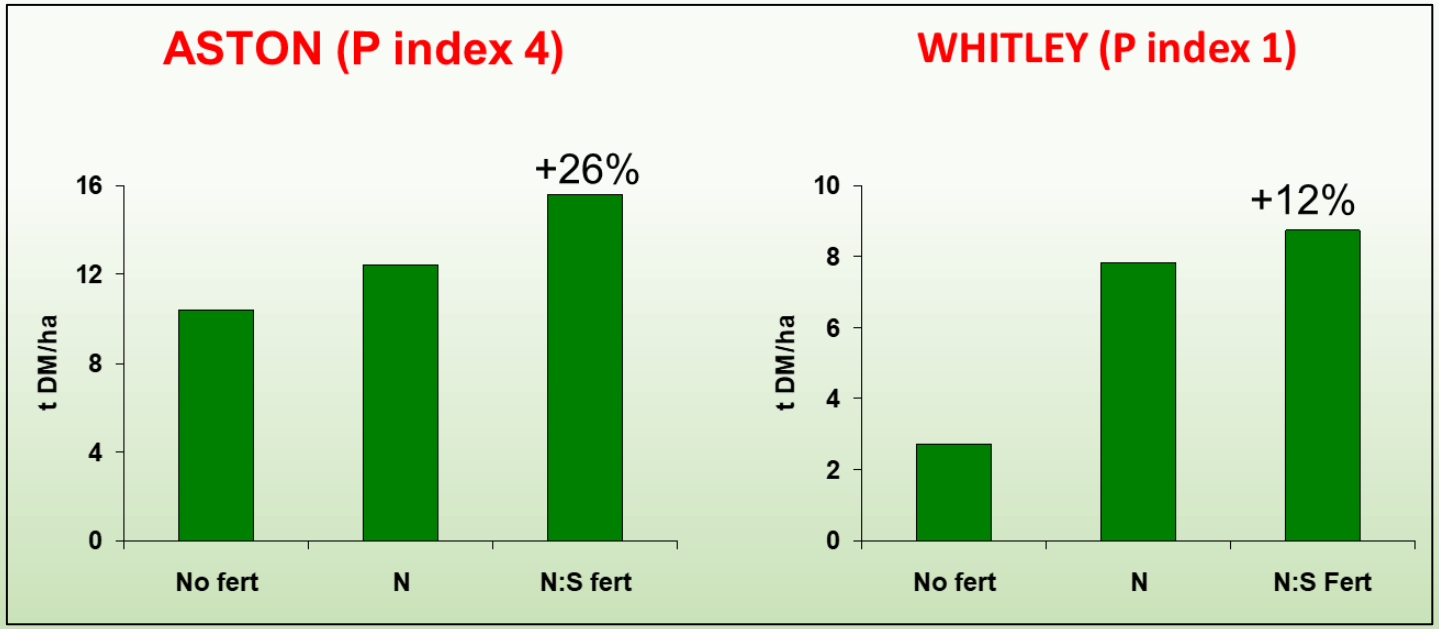
- BUT – only 32% at pH 6.0 to 6.49…?11% lower than pH 5.5!! 35% pH 5.5-5.99
  PAAG 22/23 report - improvement on previous reports, but room for more

Don’t buy/apply what you don’t need…



Soil P index (analysis in mg/l)			
0 (0-9)	1 (10-15)	2 (16-25)	3 (26-45)
P_2O_5 application rate			
80	50	20	0

But DO buy/apply what you do need…



Try to avoid large individual N dressings

Try to leave a few days between slurry & bagged N

Utilise, not spread, slurries – but take note where they may under- or over- supply

Average 6% DM slurry applied to NVZ maximum of 250 kg N/ha supplies:
Total phosphate 115 kg/ha, available 57 kg/ha
Total potash 240 kg/ha, available 216 kg/ha

On a 3-cut system yielding 47t/ha FW:
Phosphate offtake is 80 kg/ha
Potash offtake is 282 kg/ha

So if P index is 2 or higher – likely oversupply
But if K index is 2- or lower – likely undersupply!

High P indices – risk of losses to water increase

Sub-optimal K – impacts on N use efficiency, so also crude protein, water regulation in the plant…. & more

Take account of the N supply in manures

(challenge of stocking rate)

And of course – what you grow!

Huge potential benefit from legumes:
N fixation (reduced need for bagged N)
Crude protein content
Good D value
Soil structure
Yield (especially red)

Barriers and challenges?

- Product availability can be an issue (but also newer products, *eg* potash plus, polysulphate)
- Stocking rate can be a challenge for being able to utilise slurry to its best
- Perceived complexity of nutrient management?

For legumes:

- Worry about potential for bloat
- Worry of weed control especially for reseeding
- Lack of good advice for N use
- N fixation takes a little time to reach full potential
- May need tweak in management/mindset to get best results