Propyzamide case study: Practical control options

<u>Objective</u>: to reduce the amount of propyzamide leaching to water supplies

<u>How?</u> Can we place <u>less</u> reliance on propyzamide by placing <u>greater</u> reliance on clethodim?

At least with low/medium black-grass infestations or 'high leaching risk' fields

Affinity Water

Stephen Moss Consulting

alopecurus@aol.com

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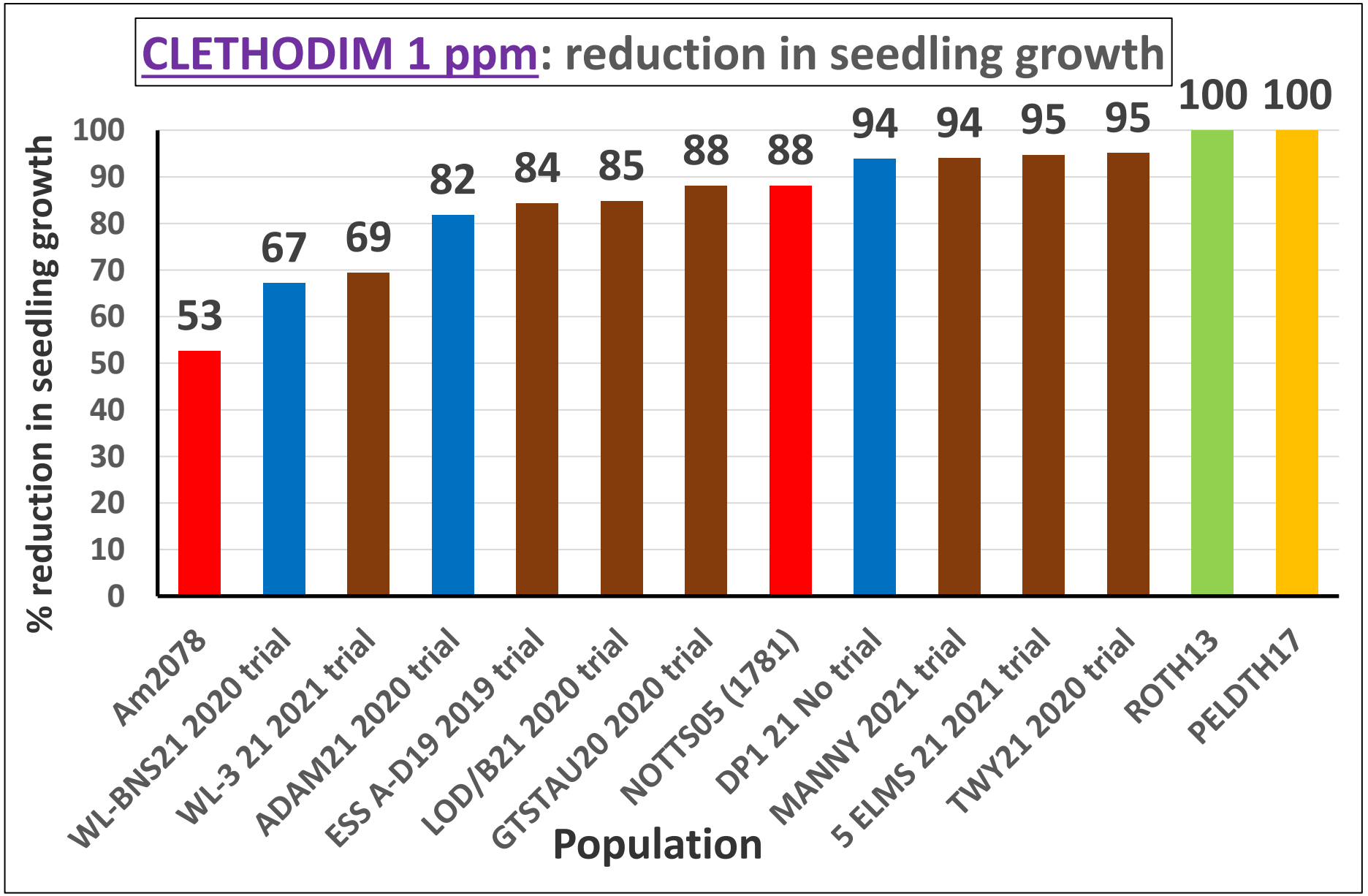
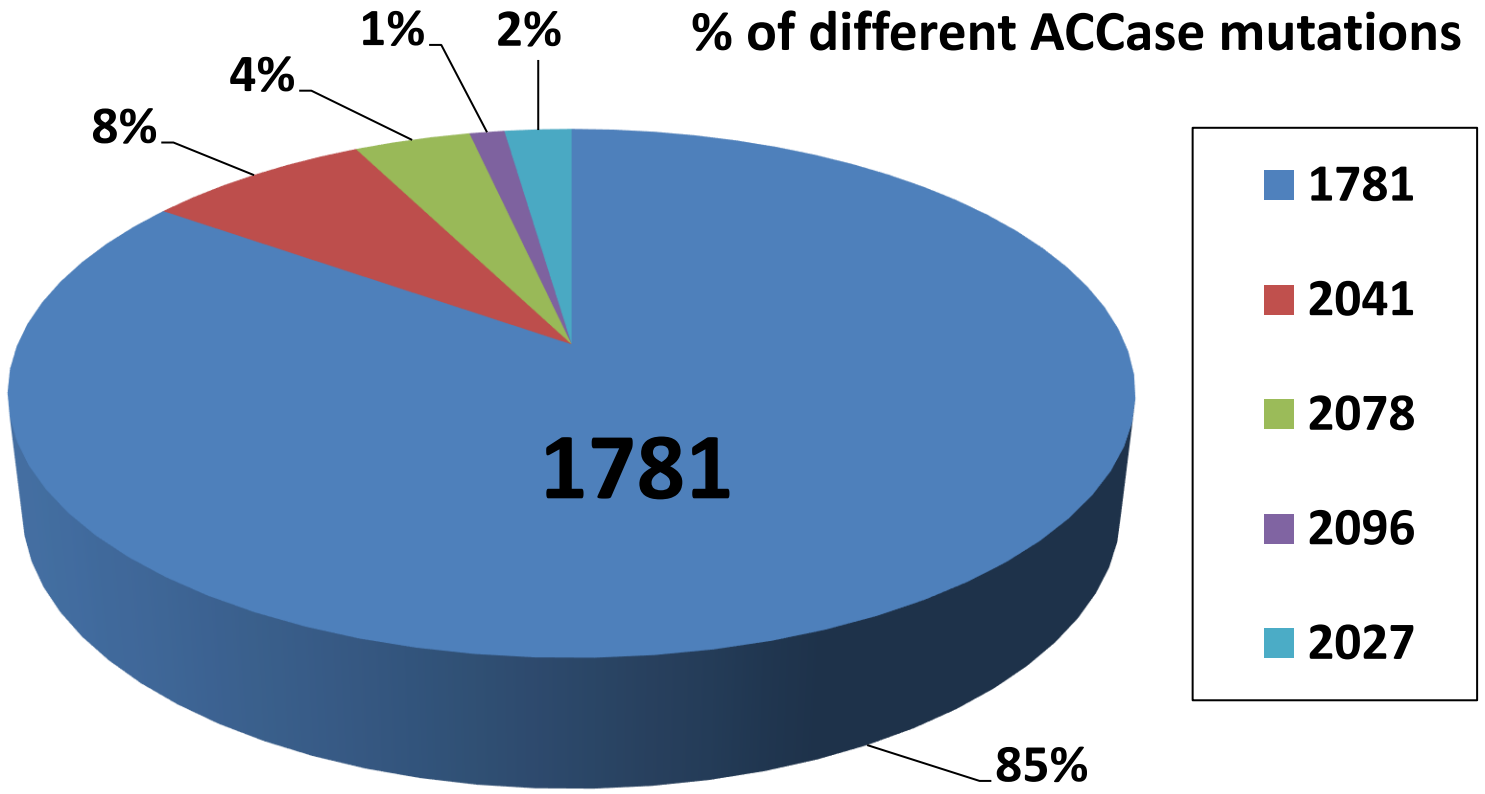
2019 - 2022 Studies

- Resistance status of black-grass in all field trials
- Water hardness and clethodim efficacy
- Value of X-Change on clethodim efficacy
- Seven oilseed rape field trials: reduced rates/sequences of propyzamide after clethodim
- Propyzamide leaching studies

Black-grass resistance test: Clethodim



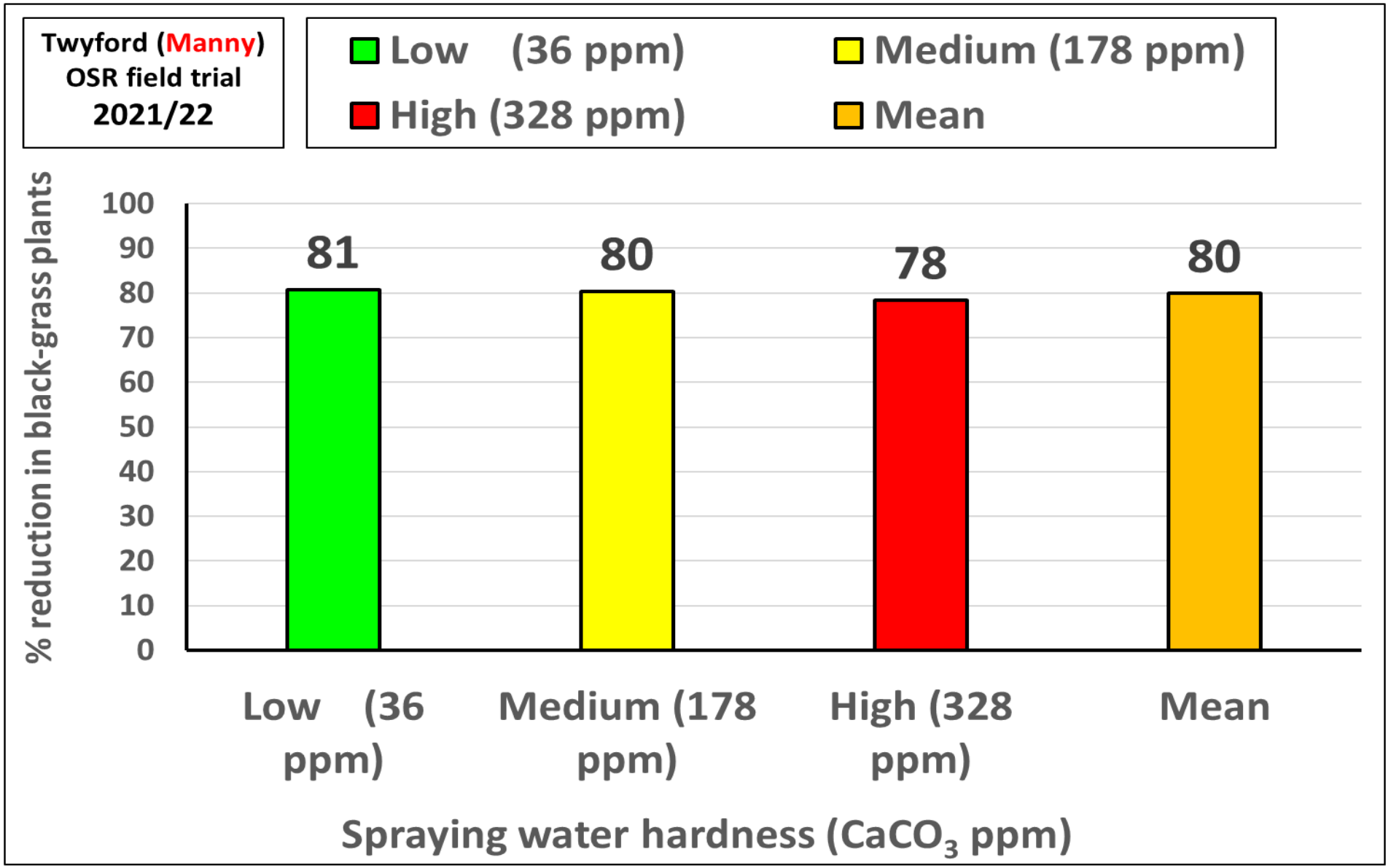
Frequency of different ACCase target site mutations in black-grass in the UK



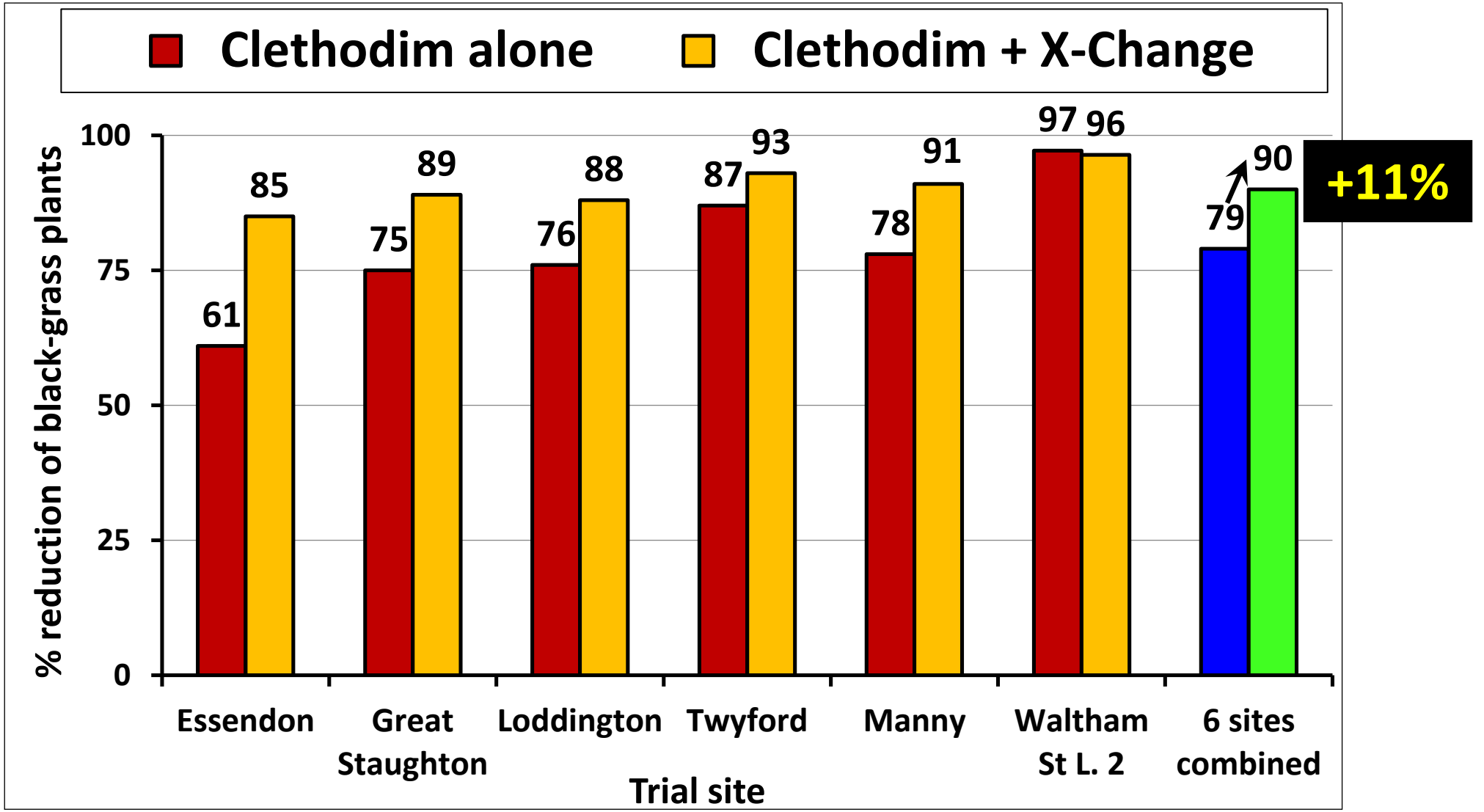
Samples from 132 fields in England in 2014. 2574 plants assayed

BGRI AHDB Project Report No 601, 2019

Water hardness had NO EFFECT on clethodim

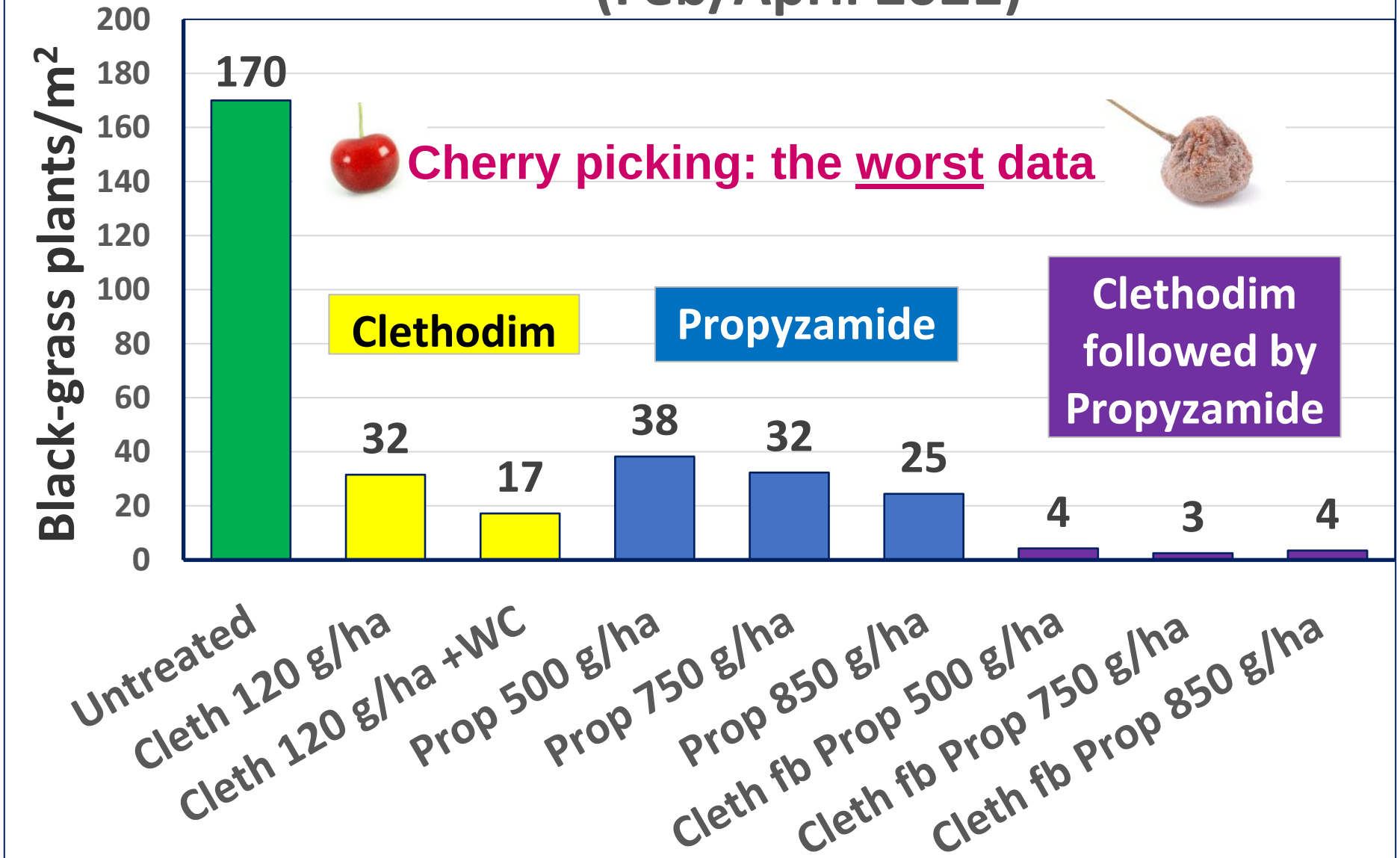


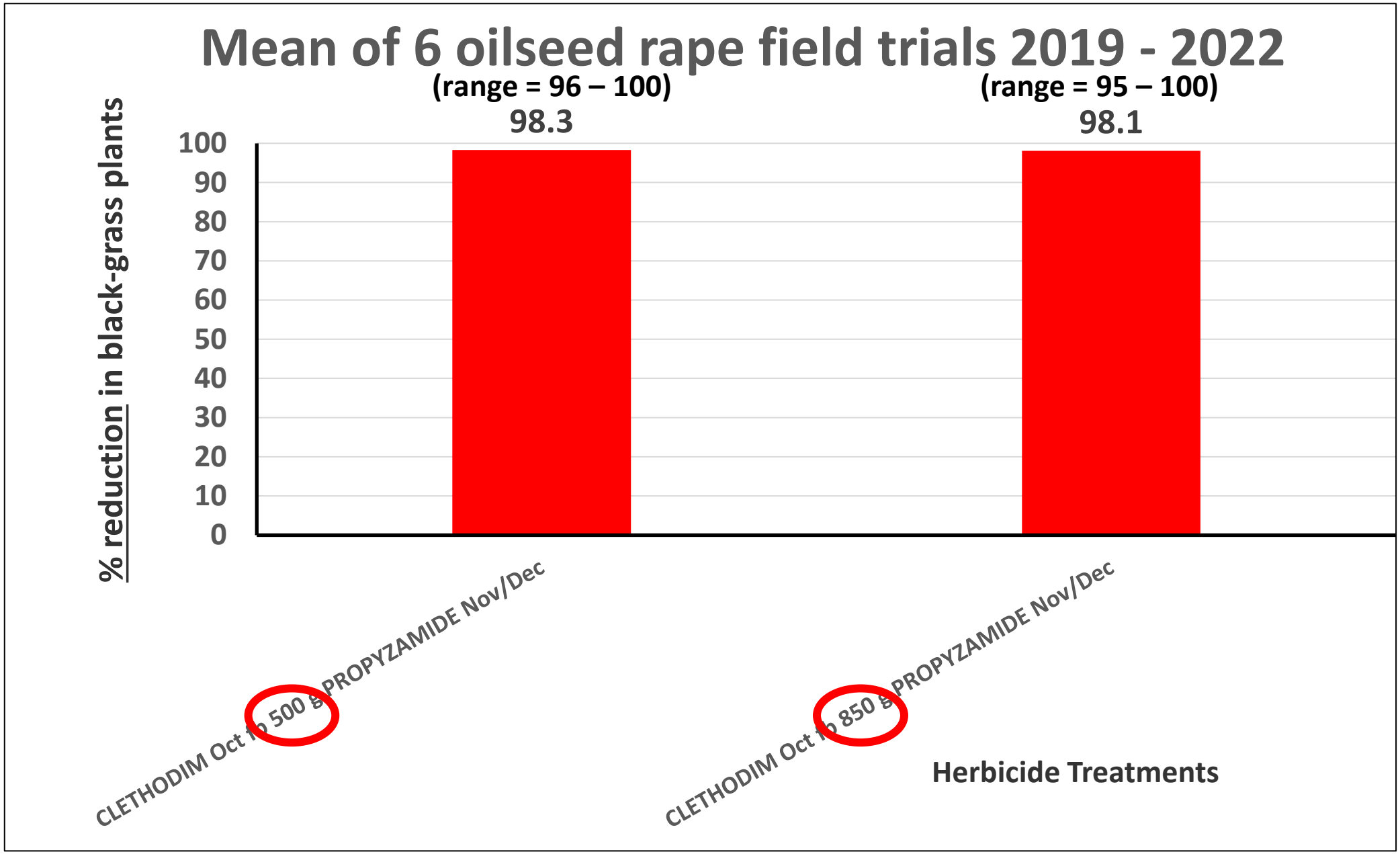
Water conditioner (X-Change) increased efficacy of clethodim on black-grass in 6 OSR trials 2020 - 2022



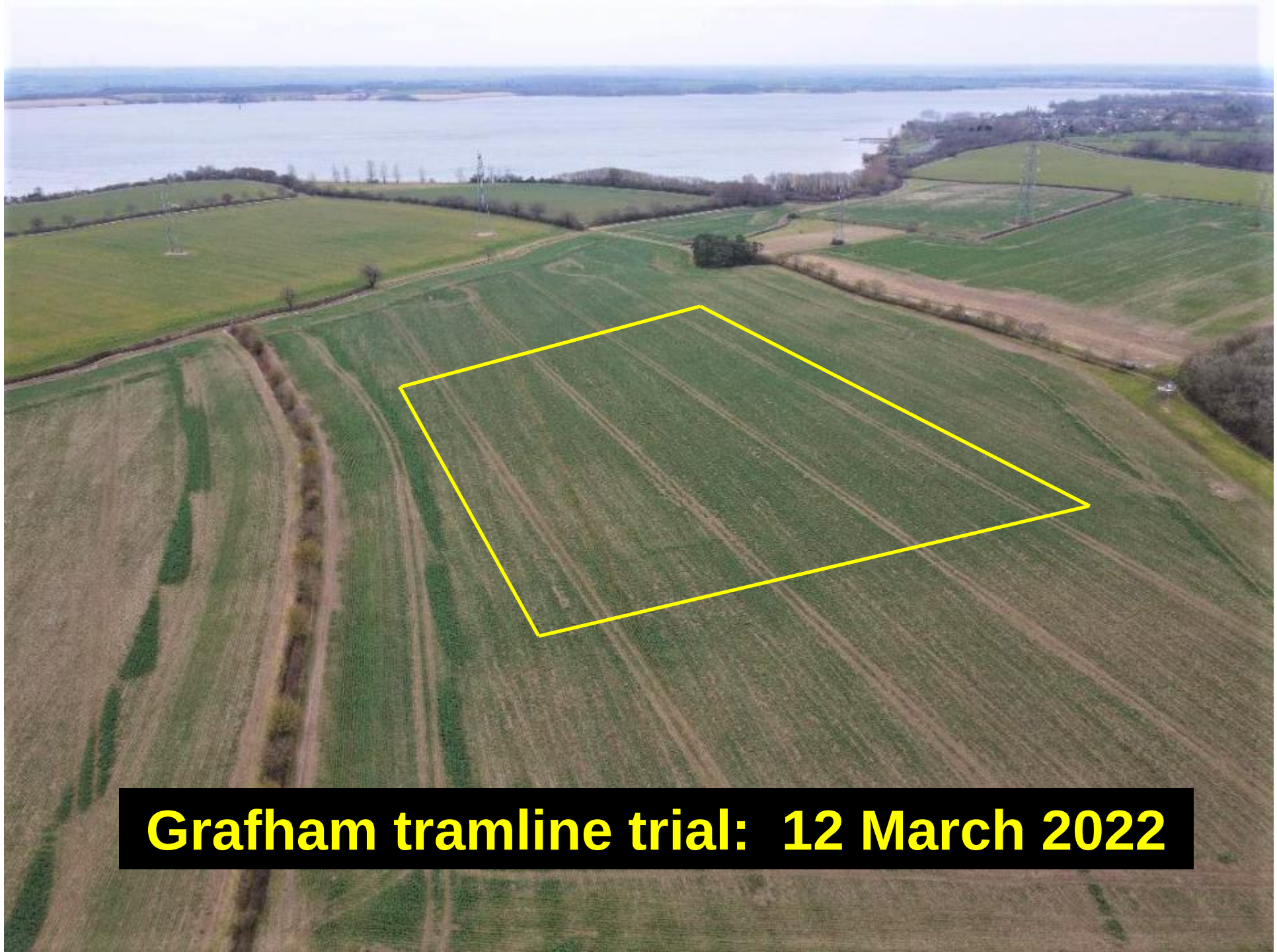
Clethodim applied Sept/early Oct

Twyford: black-grass populations in OSR (Feb/April 2021)

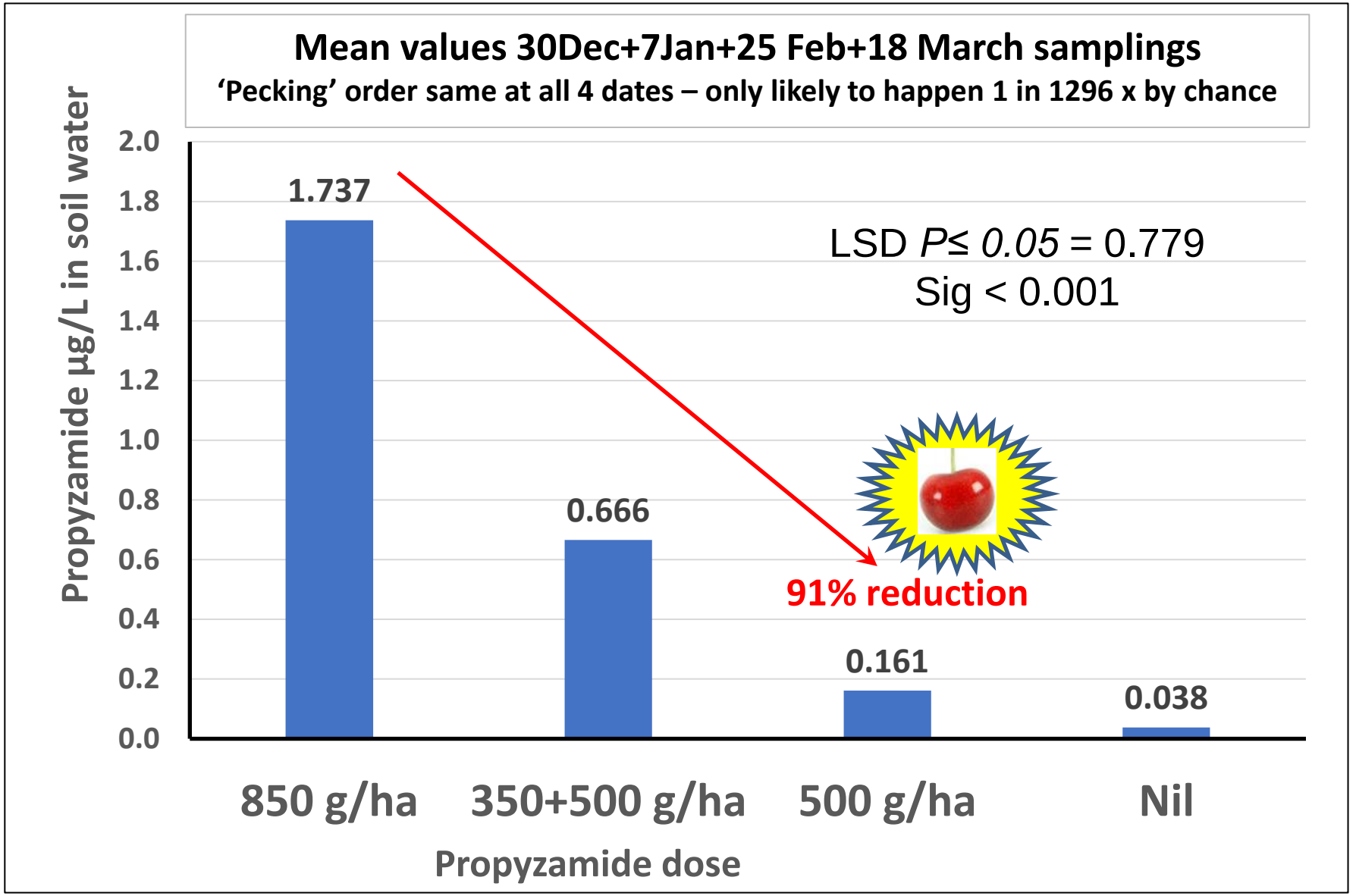




Black-grass populations: 21 – 170 plants/m^2


Grafham tramline trial: 12 March 2022

Grafham trial 2021/22: propyzamide in soil water



Affinity Water/Anglian Water Project

- Can test for resistance status to clethodim – useful in confirming presence/absence of severe resistance
- No evidence that water hardness affects clethodim efficacy
- Good evidence that X-Change improves clethodim efficacy (by ~11%) regardless of water hardness
- Following clethodim, reducing the rate of propyzamide from 850 to 500 g/ha in Nov/Dec is possible without compromising control
- This can reduce the amount of propyzamide leaching to soil water

Yes, there are risks. These ideas are not about saving money; rather, they are more about saving propyzamide.

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I would like to thank:

- *Affinity Water and Anglian Water for funding project*
- *Farmers for hosting trials*
- *Alan Dewar & Charlie Riches for trials support*
- *Particular thanks to Danny Coffey, Affinity Water, Catchment and Biodiversity Team*

Reduced rate propyzamide (500 g/ha in Dec) plot on 2 June 2022 – *still very clean*