



Control of yellow rust - UKCPVS 2021

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CEREALS & OILSEEDS

Yellow rust 2020

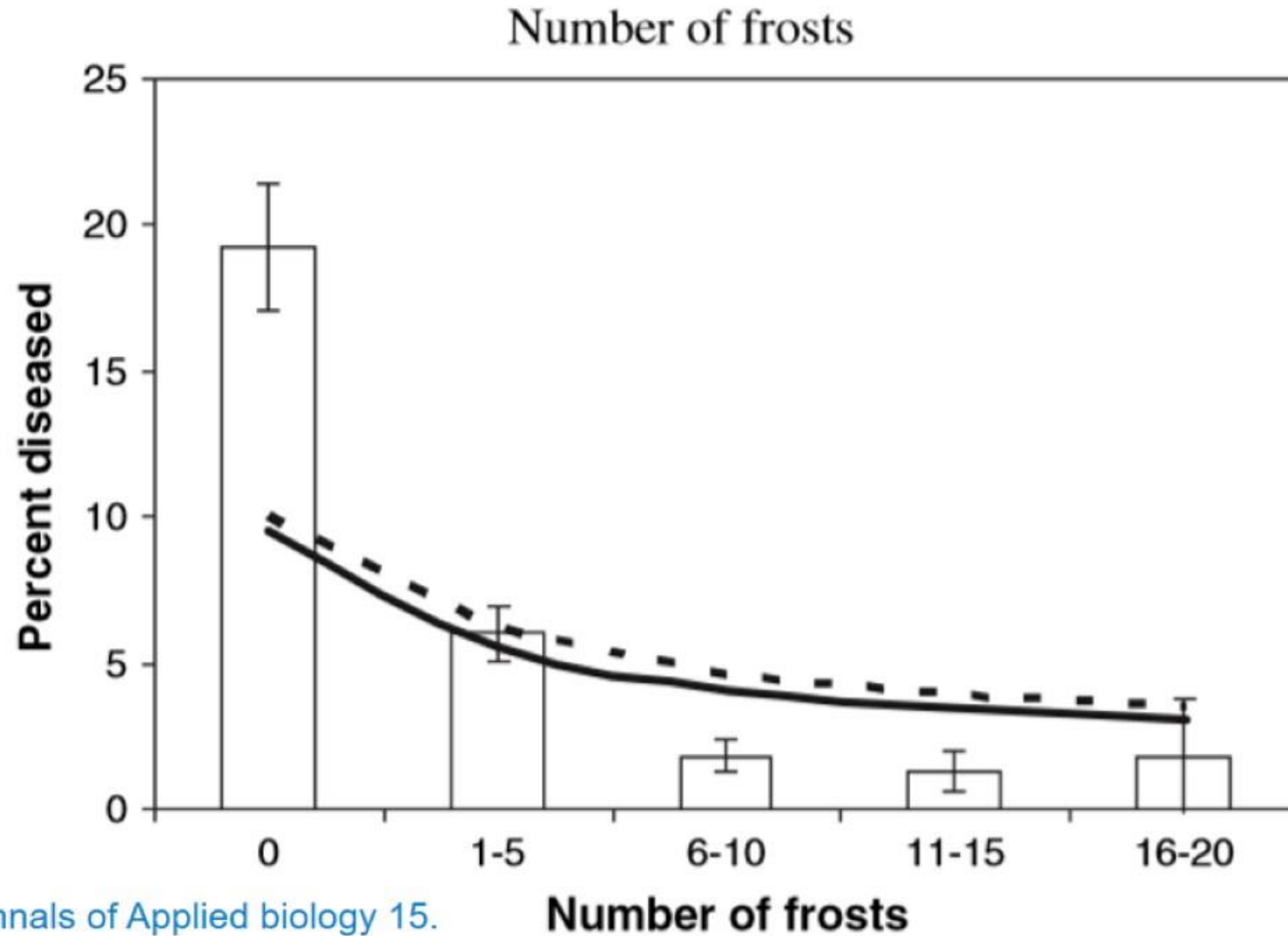
- Races
- Winter / spring weather
- Sowing date



Yellow rust – Agronomic factors affecting risk

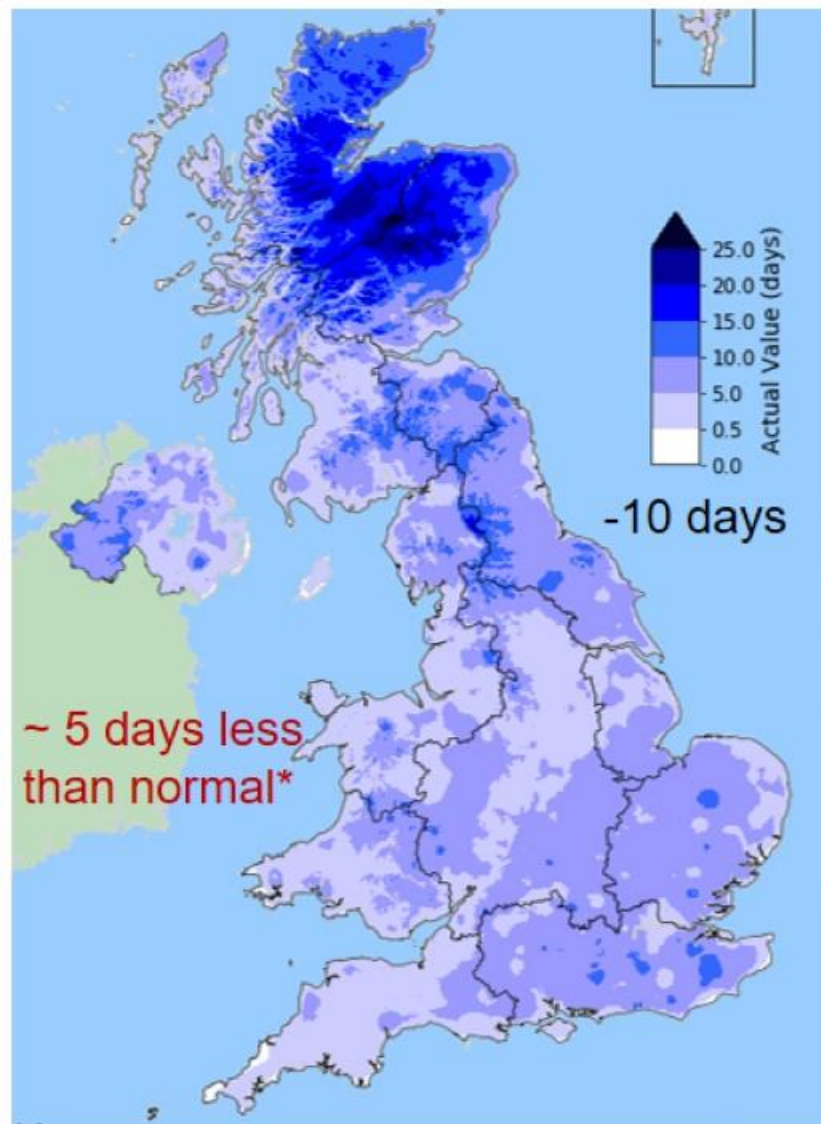
- Analysis based on 4475 treated UK wheat crops, over a 15 year period
- Incidence of yellow rust investigated (using random effect logistics regression).
- Factors investigated included:
 - Cultivar resistance
 - Number of frosts (<-5)
 - Sowing date
 - Number of sprays
 - Seed treatment

No of Frosts below -5 degrees - on yellow rust

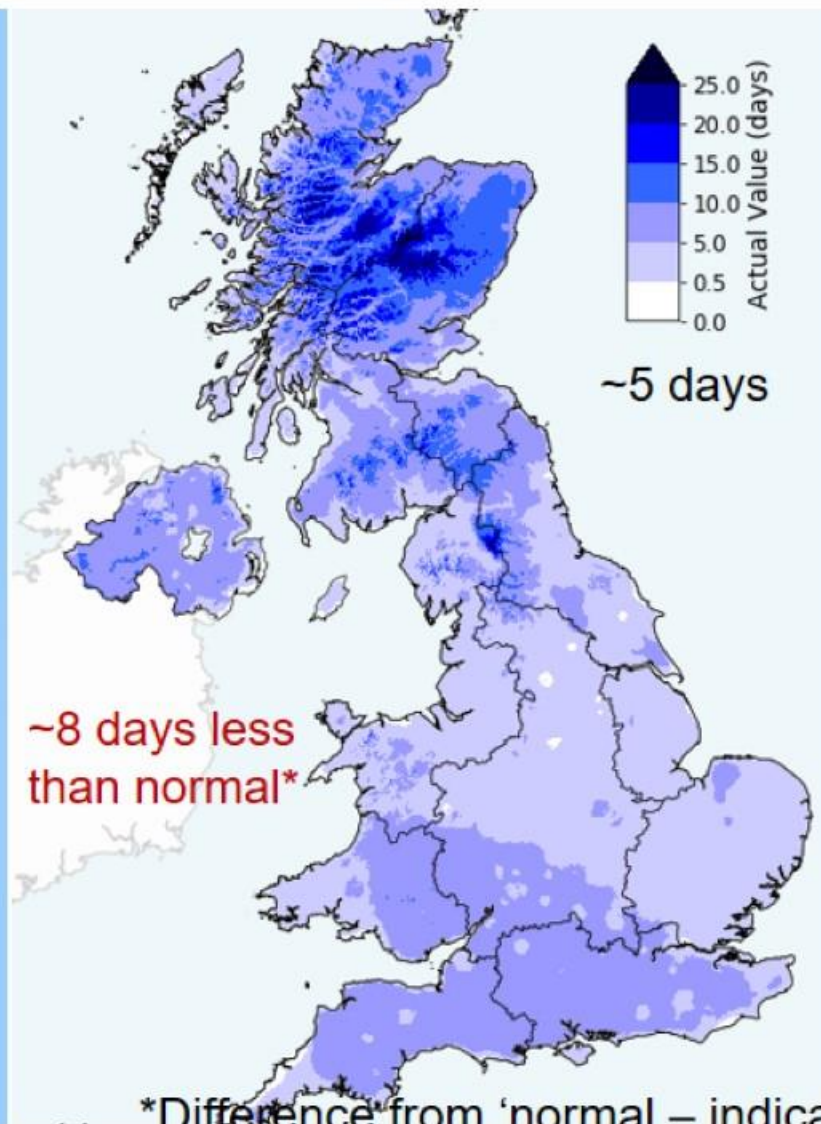


Last winter - Actual air frost days 2019-2020

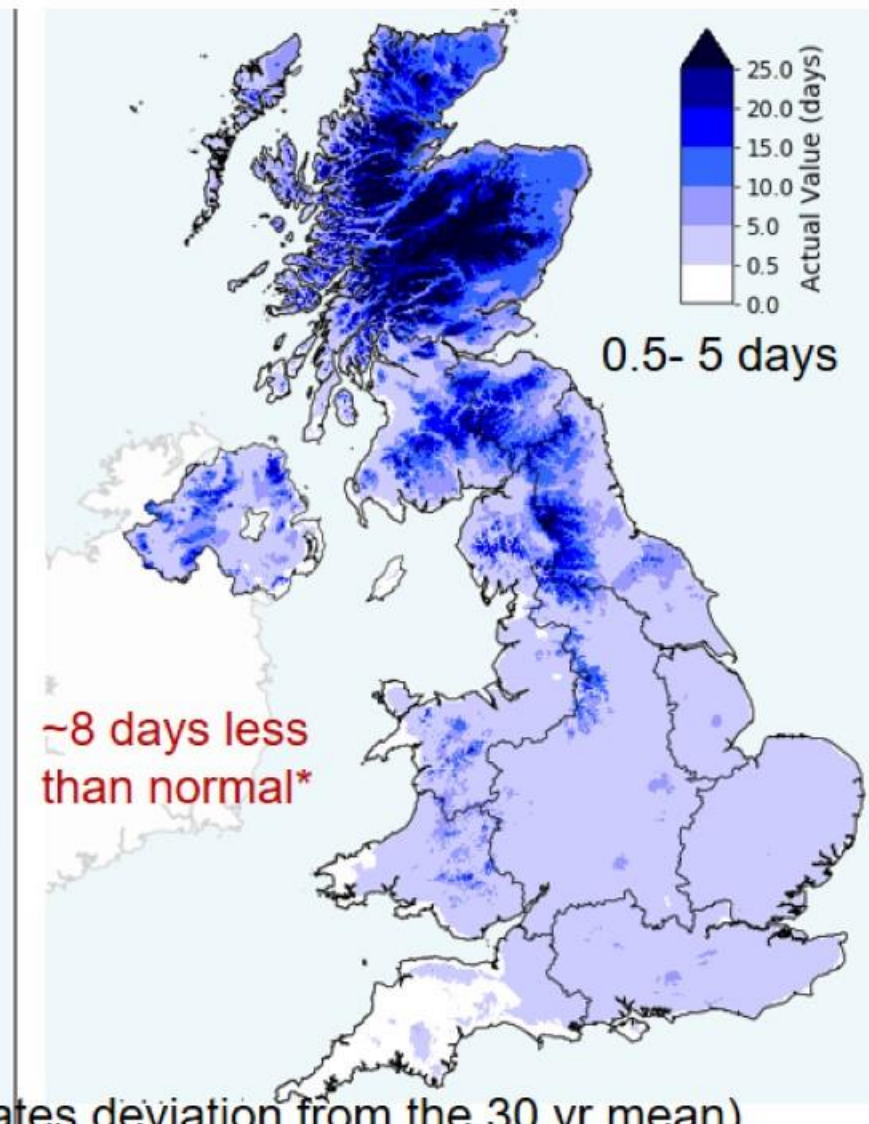
December 2019



January 2020



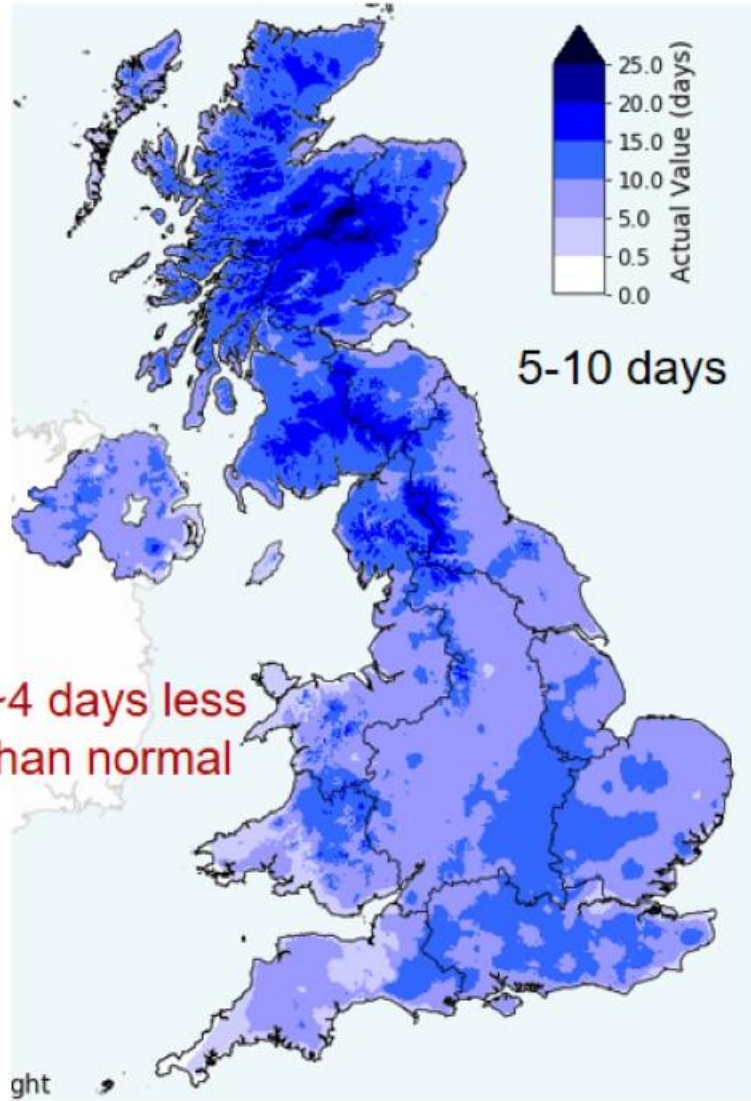
February 2020



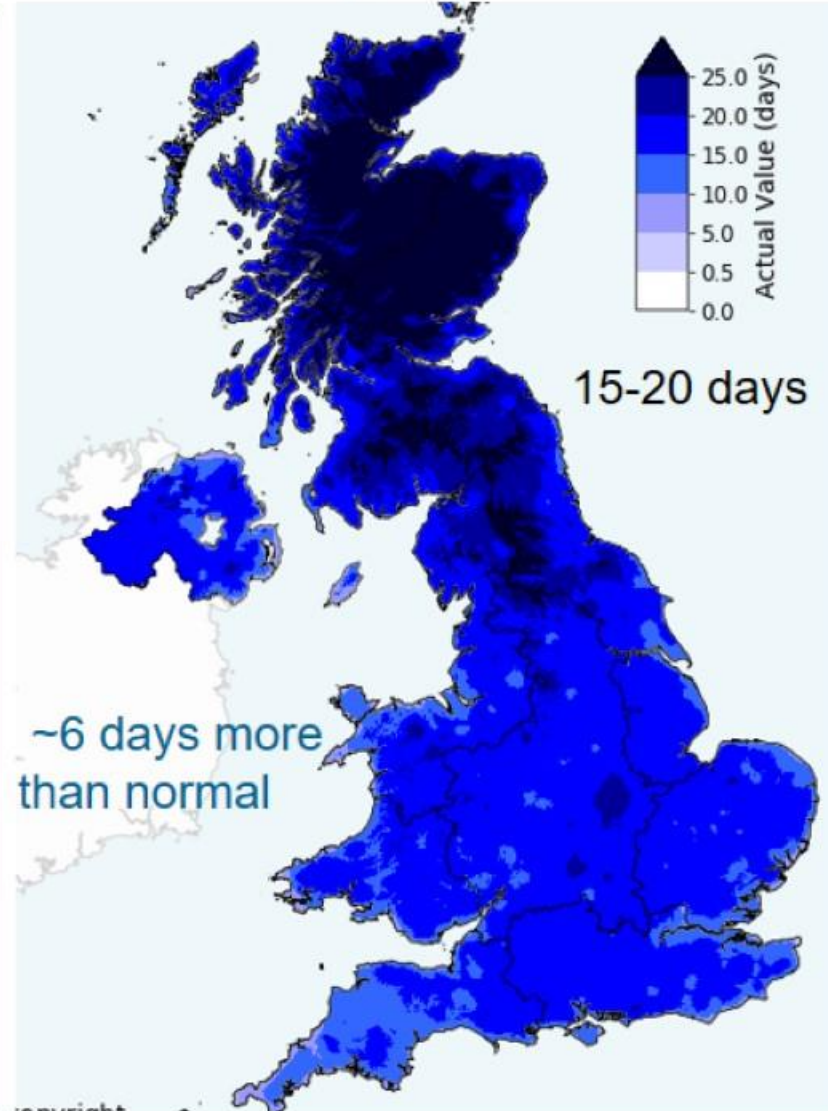
*Difference from 'normal' - indicates deviation from the 30 yr mean)

This winter - Actual air frost days 2020-2021

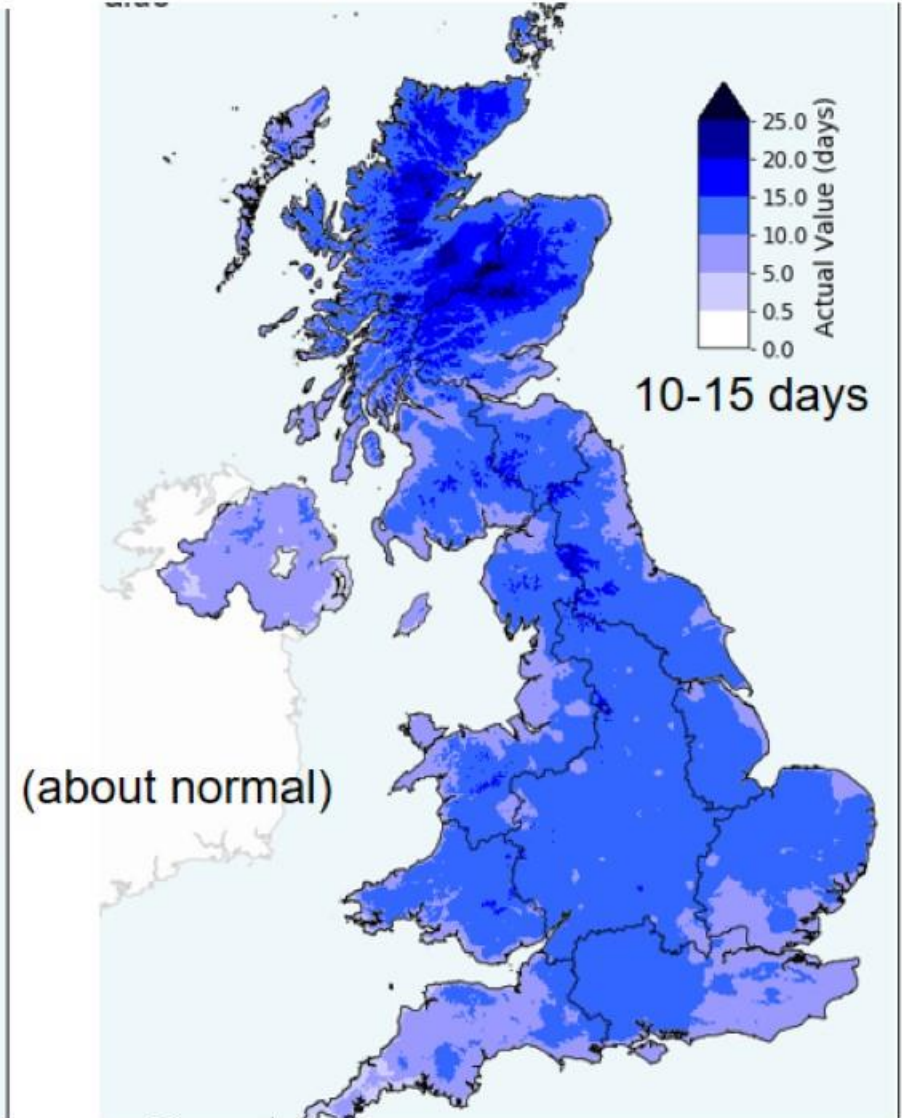
December 2020



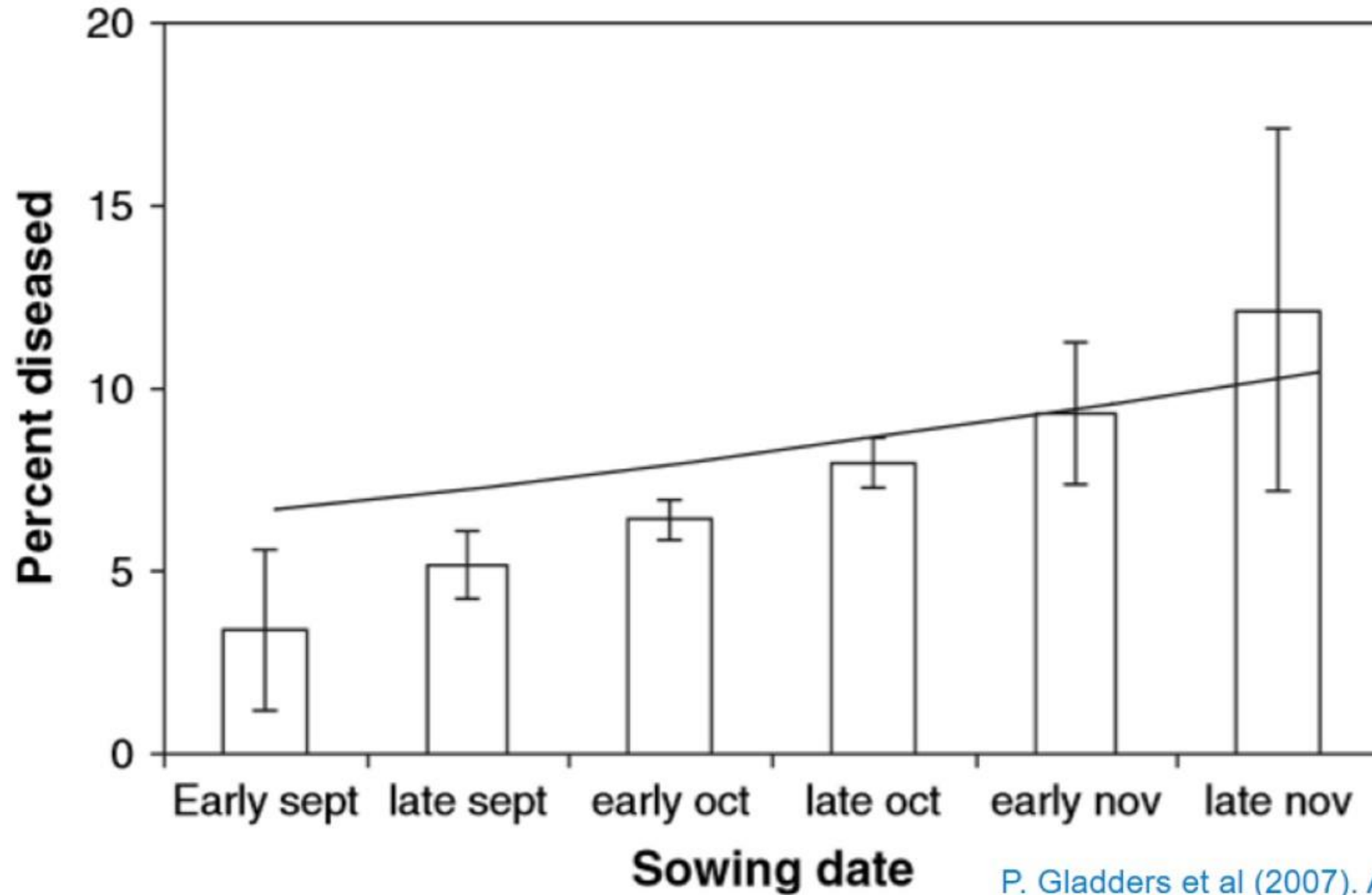
January 2021



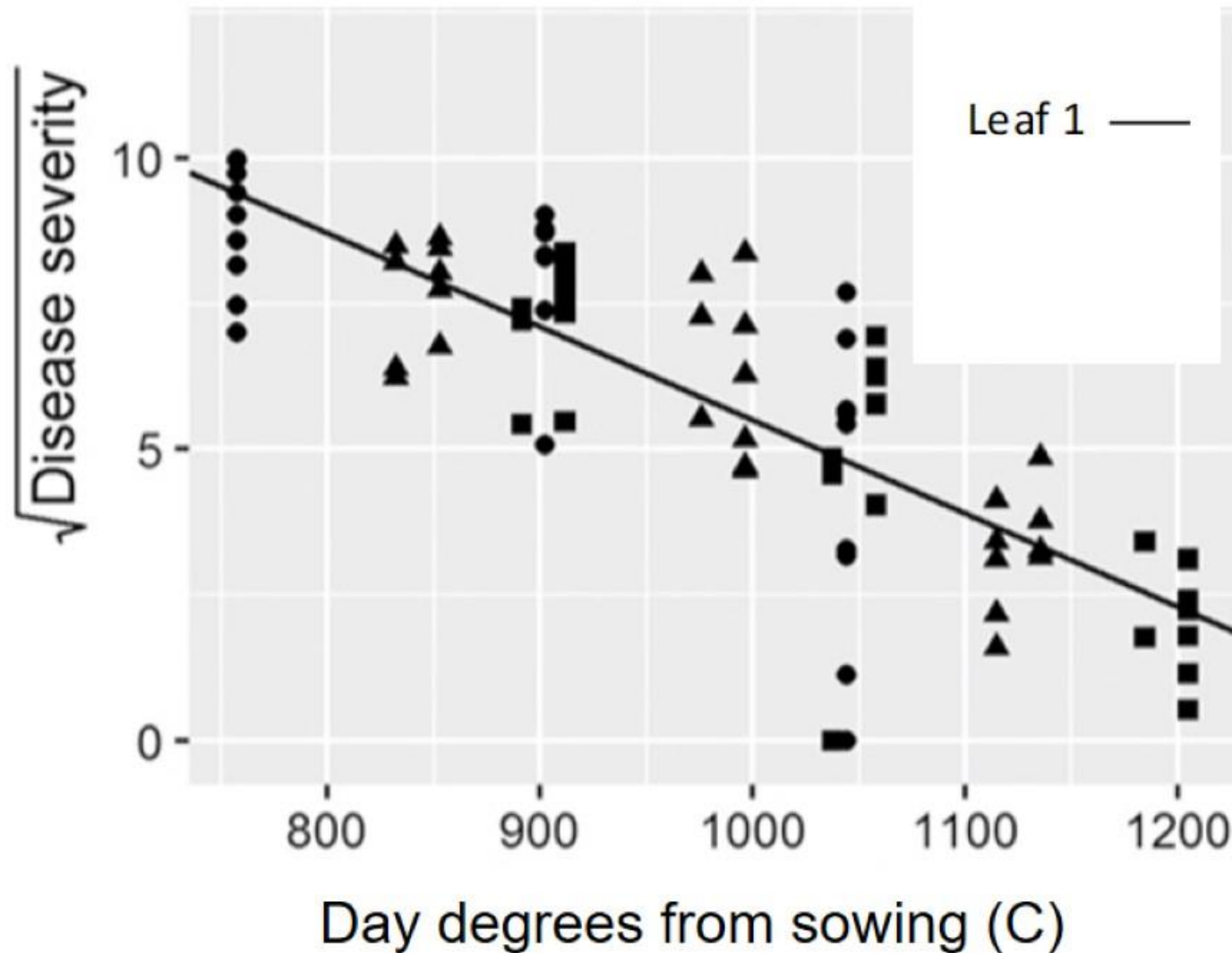
February 2021



Sowing date on yellow rust



Juvenile susceptibility to yellow rust



Laboratory inoculation studies
 Farber D.H. & Mundt C.C.
 (2017) *Phytopathology*
 107:412-417

Yellow rust control

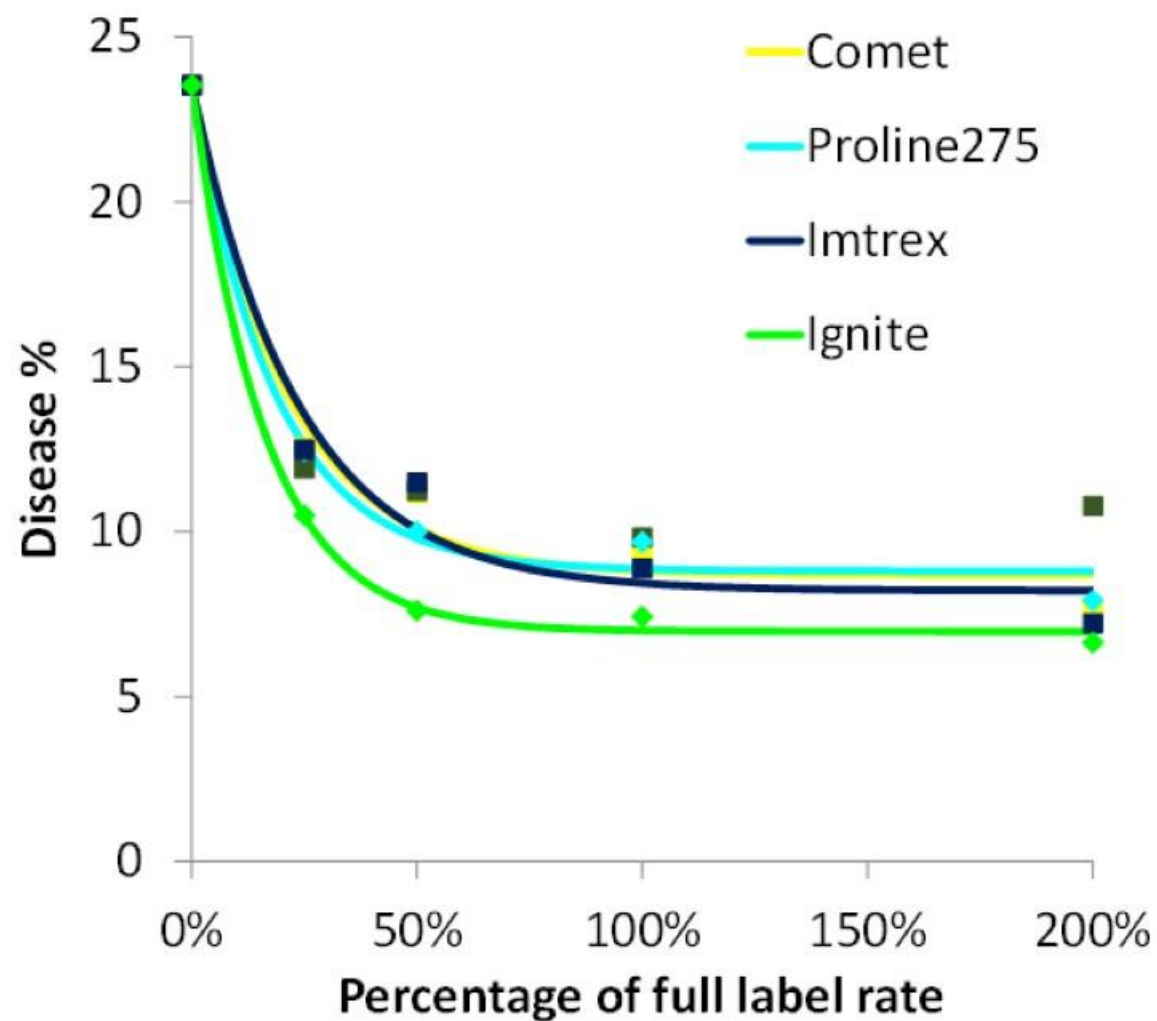
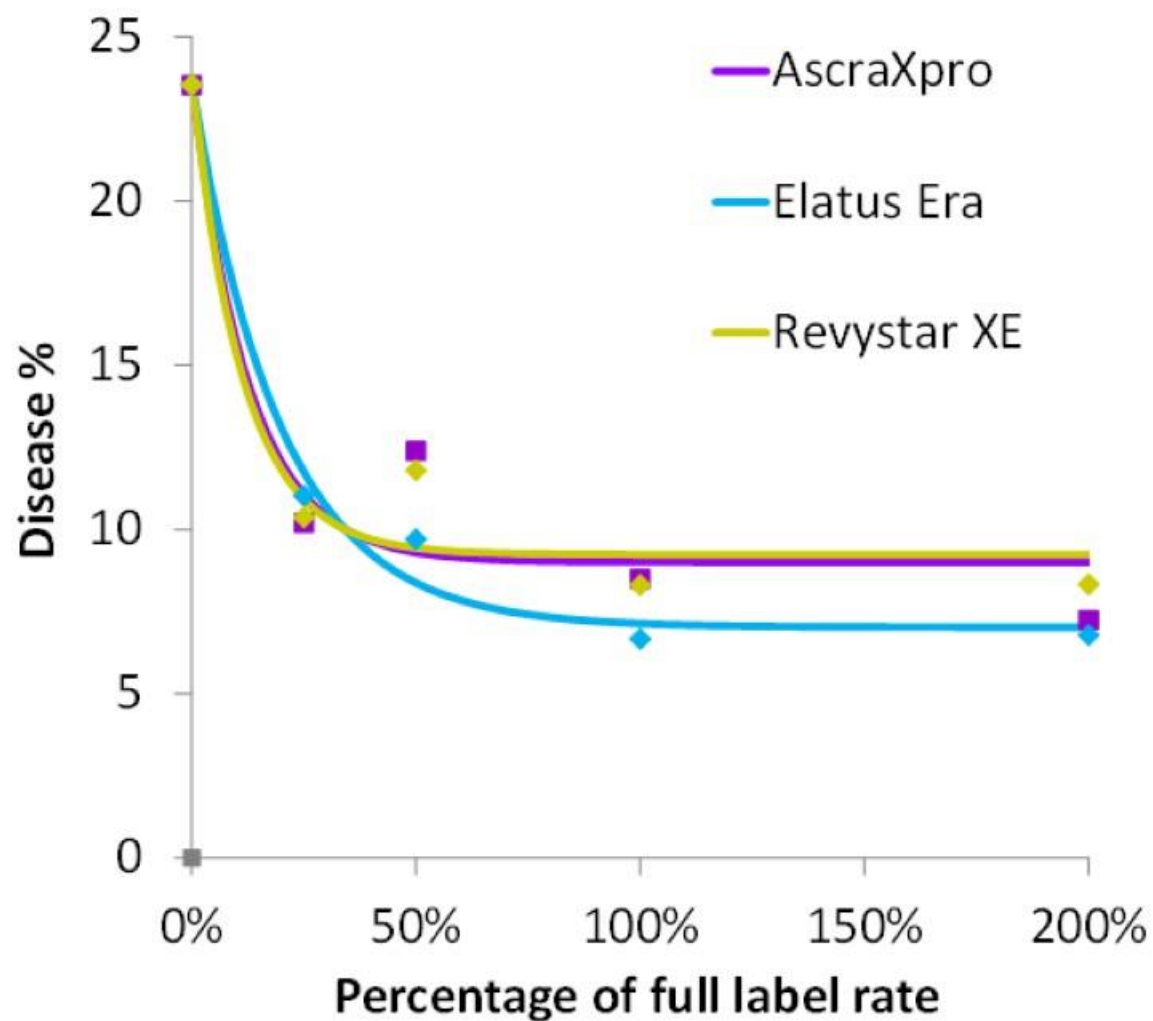


Depends on

- Detection
- Frequency of application
- Product / rate used

AHDB Fungicide performance

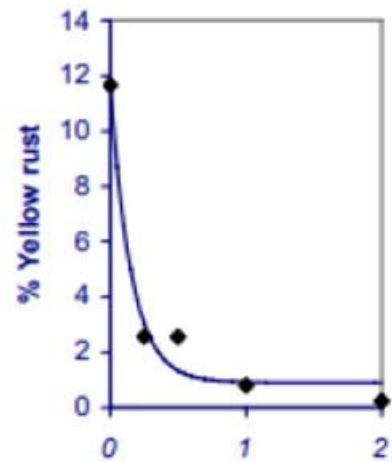
Yellow Rust 2018-2020 (3 trials)



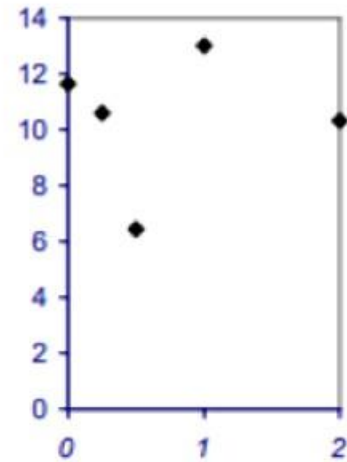
Yellow rust control 2005-2007

(Eradicant & Protectant)

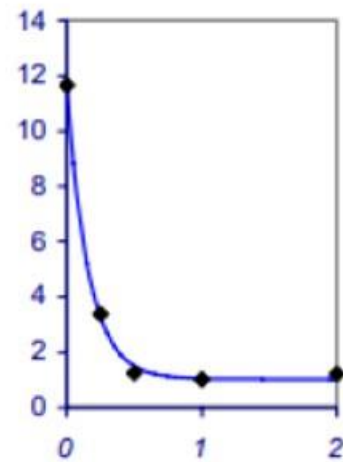
Opus



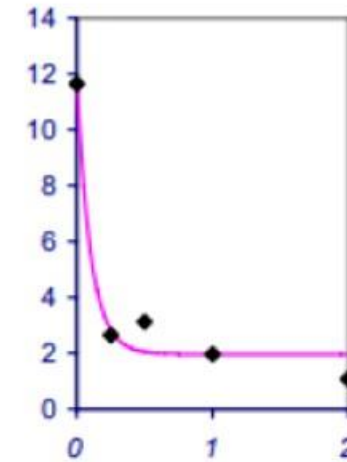
Bravo



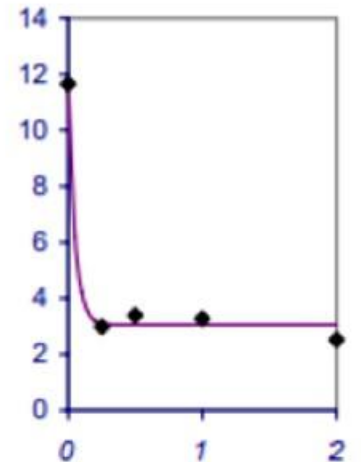
Folicur



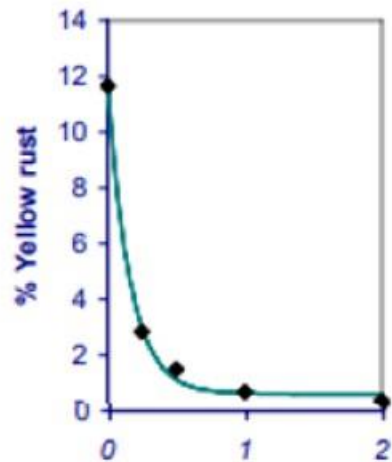
Amistar



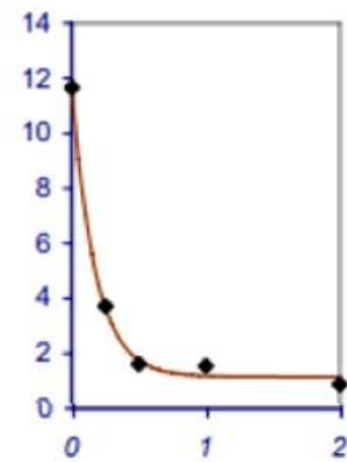
Comet200



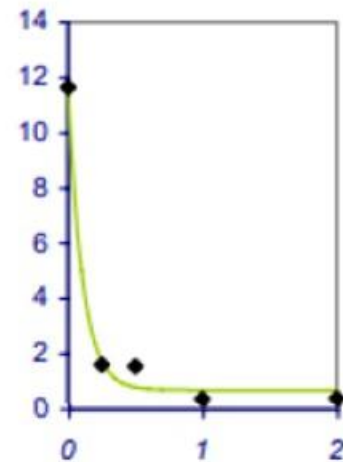
Fandango



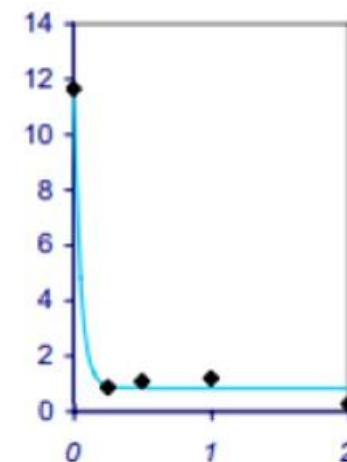
Proline



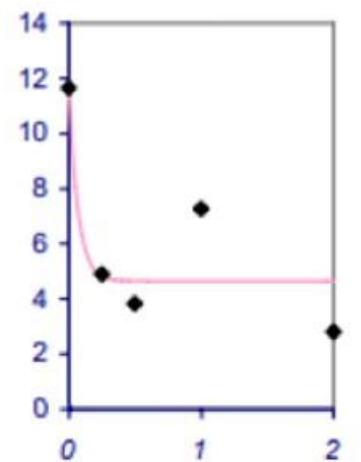
Prosaro



Tracker



TorchExtra



Fungicide Performance demo – Yellow Rust 2020 – Herefordshire cv Myriad



T2 Untreated

Fungicide Performance demo – Yellow Rust 2020

Repeat applications at GS32 and GS37



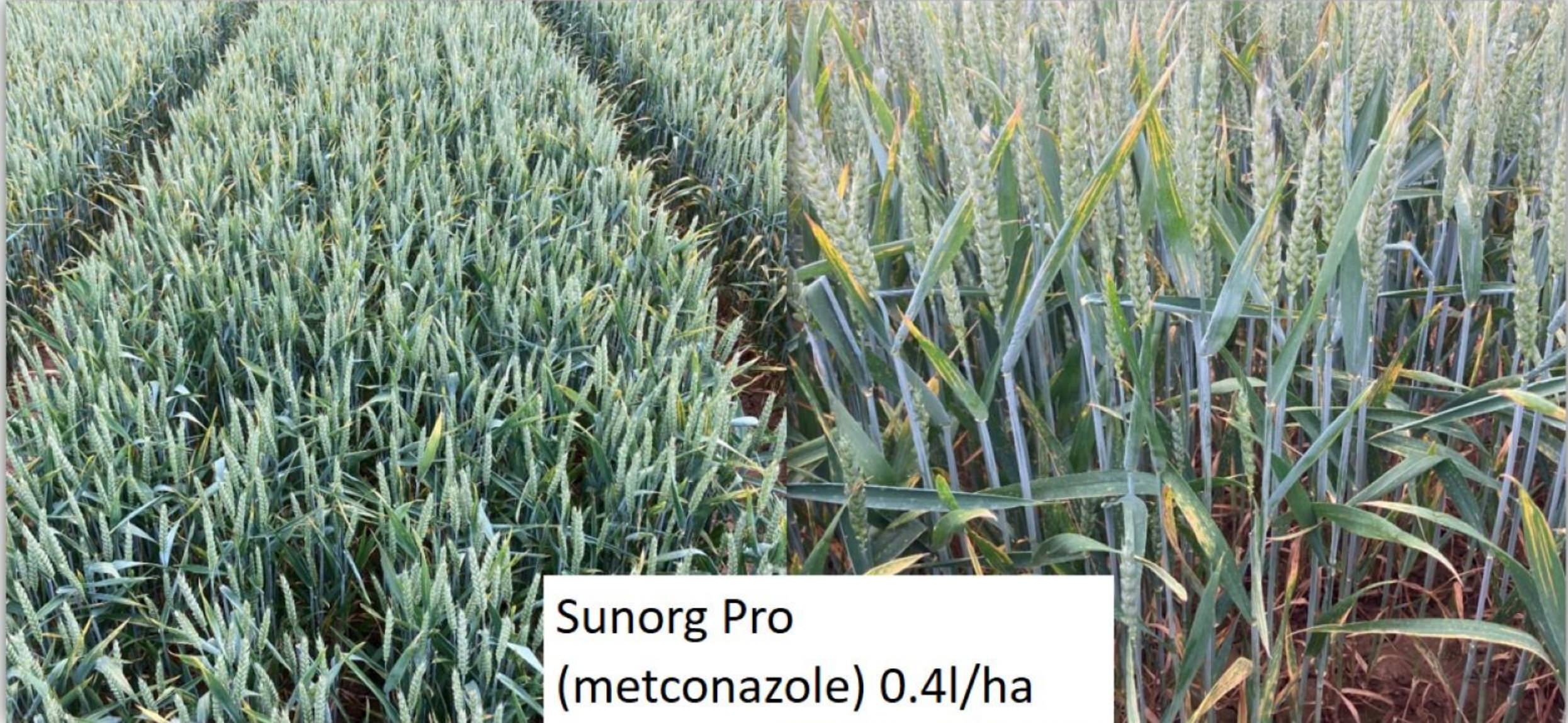
Legend 0.5l/ha
(Tebuconazole)

Fungicide Performance – Yellow Rust demo 2020



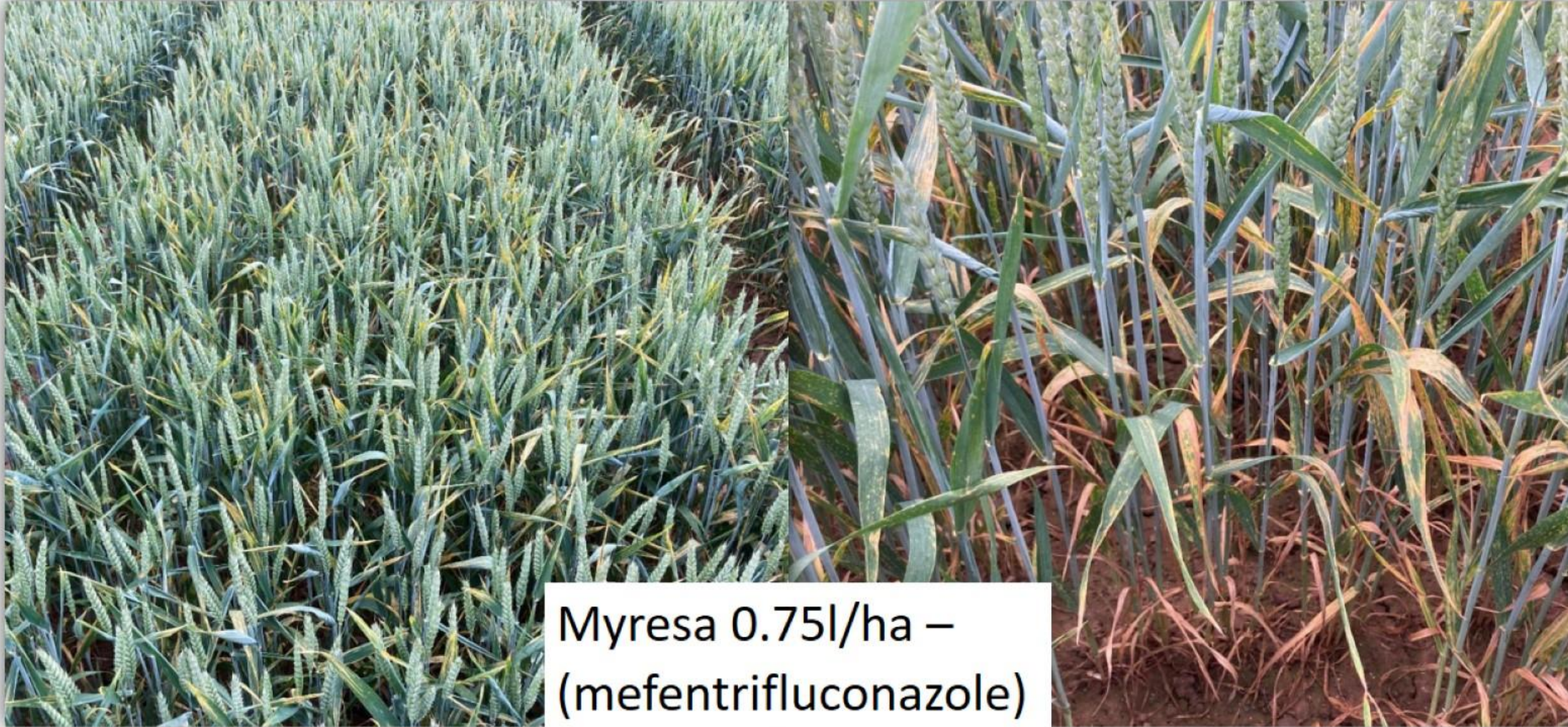
Proline 0.36l/ha
(prothioconazole)

Fungicide Performance – Yellow Rust



Sunorg Pro
(metconazole) 0.4l/ha

Fungicide Performance – Yellow Rust



Fungicide timings are designed for *Septoria tritici* control

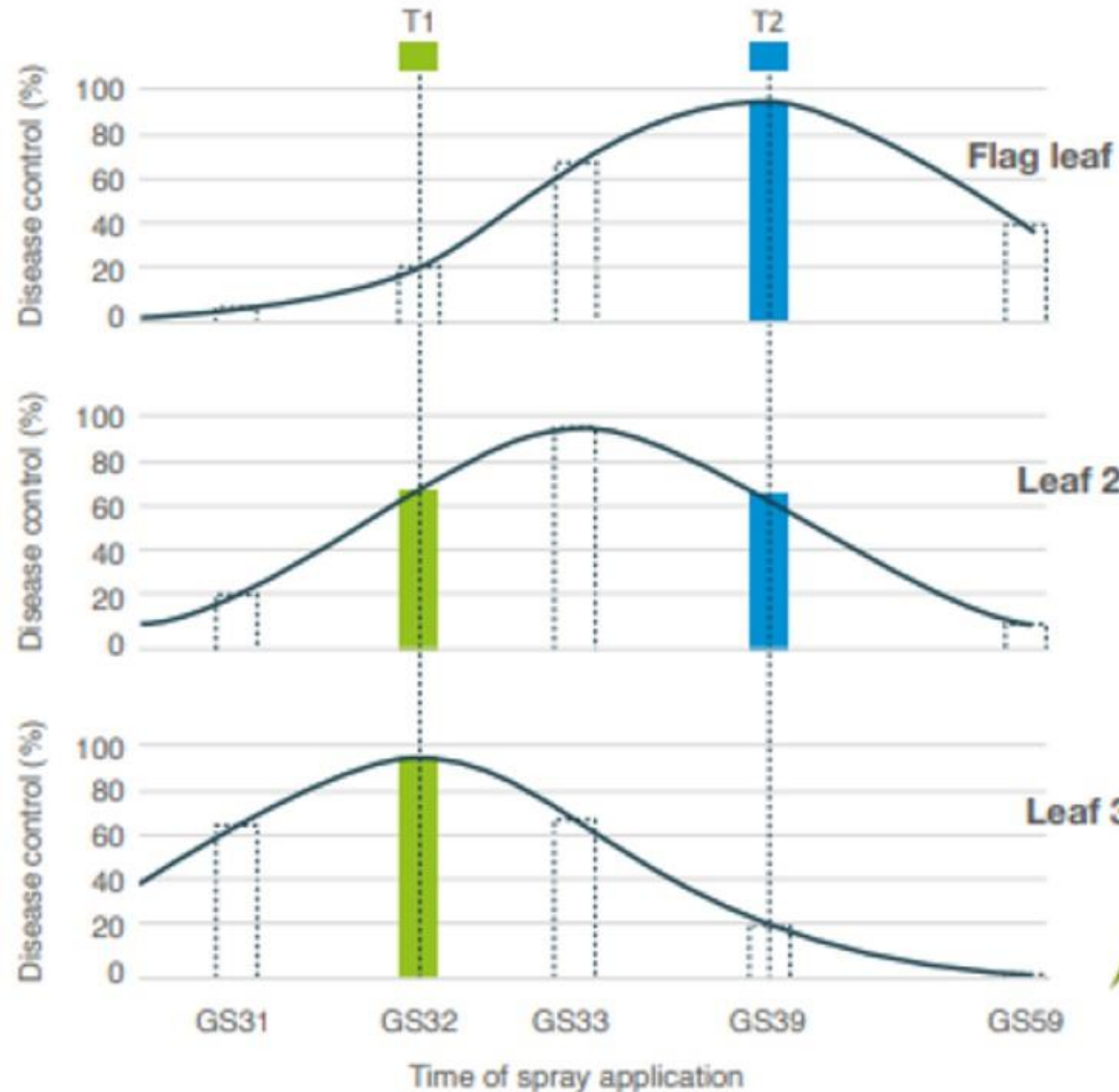


Latent Periods

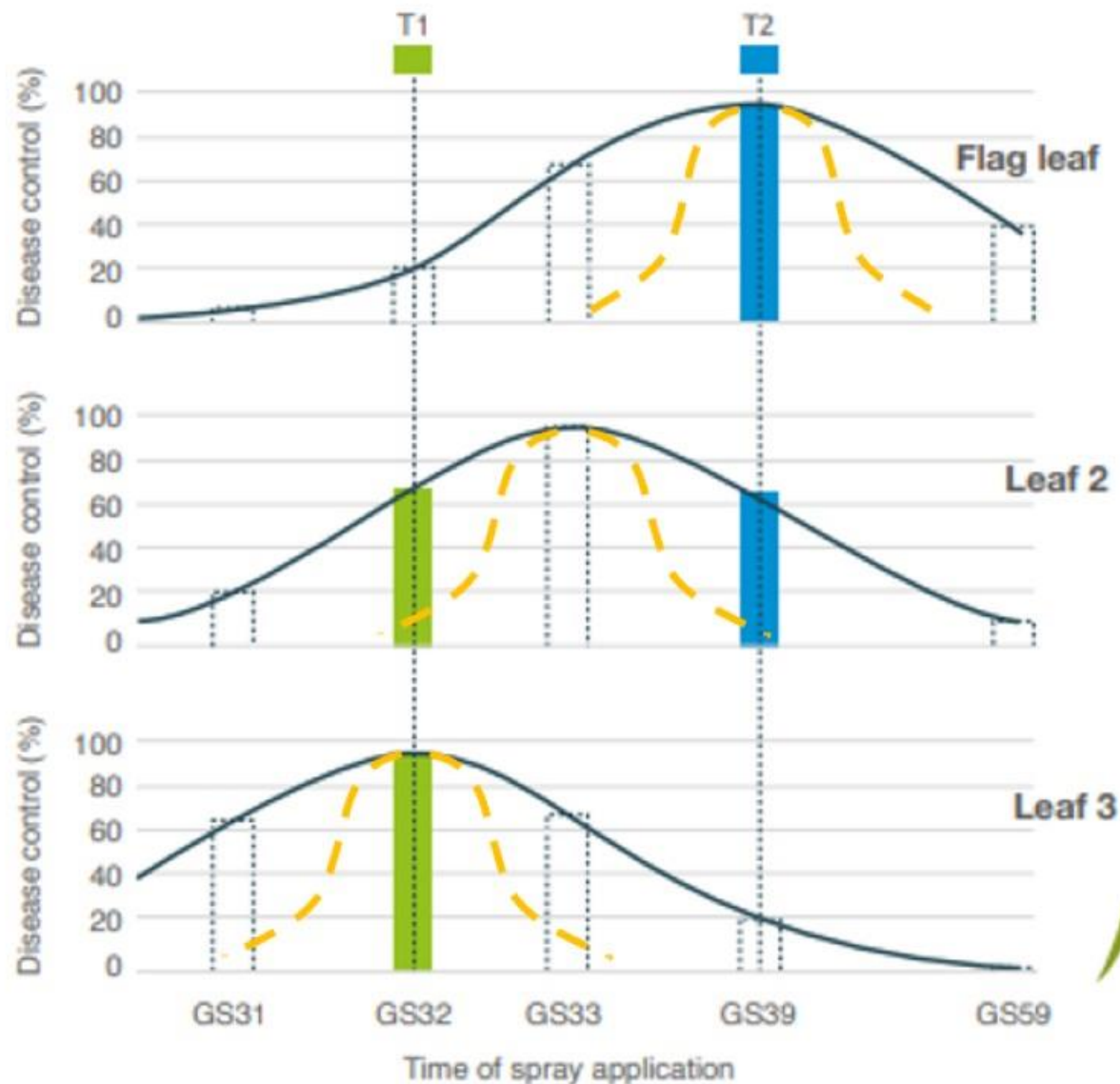
Septoria tritici – 15-28 days

Yellow rust – ~ 10 days*

* Under ideal conditions



When yellow rust is active Leaf 2 may be at risk



Yellow rust by variety 2021

Highest Risk RL 3-4	Mod / high risk RL 5	Moderate risk RL 6-7	Low risk RL 8-9
Skyfall	Zyatt	Firefly	Crusoe
Kinetic	Gleam	Spotlight	Siskin
Kerrin	Shabras	Saki	Costello
	Insitor	Gravity	Theodore
	Wolverine	Illuminate	Elicit
		Barrel	Graham*
		Swallow	Illustrious
		Quasar	Extase*
			Elation
			Skyscraper
			Merit
			Astronomer
			Prince
			Cranium

X ref@ AHDB

The yellow rust watch list (RL 2021/22)

Control of Yellow rust in wheat - Summary

Highest Risk RL 3-4	Mod / high risk RL 5	Moderate risk RL 6-7	Low risk RL 8-9
<p>Plan T1 and T2 for Septoria control Check crops regularly</p> <p>‘Mind the gap’ Consider additional timings (GS30, and possibly GS37) for Yellow rust control</p>		<p>Plan T1 and T2 for Septoria control Check crops regularly</p> <p>Additional YR control depending on season and situation</p>	

We do not have all the answers

- How does sporulation, infection efficient, and latent period vary by race?
- How does variety affect these factors?
- Which varieties have adult plant resistance?
- How susceptible does a variety have to be to require a GS30 or GS37 treatment?
- How can I tell what races have I got in my field?
- Are newer races more high temperature tolerant?
- Is frost below -5 degrees C the best predictor of YR risk?
- Is it worth adjusting sowing date to reduce YR risk?

Acknowledgements

Catherine Harries, AHDB

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