Effect on wheat cultivars (*Triticum aestivum* L.)

A. The net impact of individual and combined stress on the plant

Stress 1: *Puccinia recondita* f. sp. *triticina*
Stress 2: *Leptosphaeria nodorum*
Stage of plant: Seedling

The table shows the impact of individual and combined stress on seed weight of wheat cultivars

Cultivar	Treatment	Response under combined stress (Type A parameter*)
		Reduction over control (%)
		Seed weight
Rothwell Sprite	*P. recondita* (5×10^5 spores/mL) + *L. nodorum* (5×10^5 spores/mL) (Sequential stress)	54.66 ⬇
	P. recondita (5×10^5 spores/mL)	0.09 ⬇
	L. nodorum (5×10^5 spores/mL)	53.91 ⬇
Maris Butler	*L. nodorum* (5×10^5 spores/mL) + *P. recondita* (5×10^5 spores/mL) (Sequential stress)	20.96 ⬇
	P. recondita (5×10^5 spores/mL)	2.36 ⬇
	L. nodorum (5×10^5 spores/mL)	24.35 ⬇

Note: *Values presented in the table were calculated using the formula described below.*

$$\textit{Reduction over control (\%)} = \frac{(\textit{Value}_{\textit{Control}} - \textit{Value}_{\textit{Stress}})}{\textit{Value}_{\textit{Control}}} \times 100$$

'⬇'- *indicates plant parameter is more affected by stress that leads to high susceptibility (higher the value more the damage).*

'*'- *For more information on parameters classification, please refer to 'methodology' tab*

B. The interaction between the fungal pathogens under combined stress treatment at the plant interface

Table shows the interaction between fungus *P. recondita* and *L. nodorum* in wheat cultivars Rothwell sprite and Maris Butler in relation to the percentage of leaf area infected

Cultivar	Treatment	Response under combined stress (Type B parameters*)	
		Flag leaf area infected (%)	Leaf 2 infected

Rothwell Sprite	*P. recondita* (5×10^5 spores/mL) + *L. nodorum* (5×10^5 spores/mL) (Sequential stress)	26.65	53.43
	P. recondita (5×10^5 spores/mL)	16.43	25.28
	L. nodorum (5×10^5 spores/mL)	17.66	41.95
Maris Butler	*P. recondita* (5×10^5 spores/mL) + *L. nodorum* (5×10^5 spores/mL) (Sequential stress)	75.88	N/A
	P. recondita (5×10^5 spores/mL)	28.35	N/A
	L. nodorum (5×10^5 spores/mL)	32.78	N/A
	L. nodorum (5×10^5 spores/mL) + *P. recondita* (5×10^5 spores/mL) (Sequential stress)	51.72	N/A
	P. recondita (5×10^5spores/mL)	31.5	N/A
	L. nodorum (5×10^5 spores/mL)	57.23	N/A

(*N/A- Not available*)

For raw data – Click here (.xlsx file)

Reference– Hyde PM (1978) A Study of the effects on wheat of inoculation with *Puccinia recondita* and *Leptosphaeria nodorum*, with respect to possible interactions. Phytopath. **92:** 12-24

Note: *Values are presented as it is from the source article without subjecting to the calculation.*

'*'- *For more information on parameters classification, please refer to 'methodology' tab*

The inference from the study: Hyde, 1977, has studied the interaction between *P. recondita* and *L. nodorum* on wheat cultivars Rothwell Sprite and Maris Butler. Both the cultivars showed a similar effect on mean seed weight caused by the inoculation of both the pathogens and singly inoculated pathogen *L. nodorum*. **The overall observations from this study reveal that the cultivar Rothwell sprite showed more reduction in seed weight in comparison with the cv. Maris Butler.**