

## Effect on winter wheat cultivars (*Triticum aestivum* cv. consort and riband)

### Interaction between bacterial and fungal pathogen under combined stress at plant interphase

Table showing the effect of bacteria (*E. carotovora* ssp. *atroseptica*) on fungal (*S. tritici* and *B. graminis* f. sp. *tritici*) - induced disease

**Plant:** Winter wheat (*Triticum aestivum*)  
**Stress 1:** *Erwinia carotovora* ssp. *atroseptica*; SCRI1039 strain  
**Stress 2:** *Septoria tritici* and *Blumeria graminis* f. sp. *tritici*

Treatments	Cultivar	Trial	Assessment	Response under combined stress		
				Type B parameter*		
				Disease development		
				Bacterial concentration (cells mL <sup>-1</sup> peel extract)**		
			× 10 <sup>5</sup>	× 10 <sup>3</sup>	× 10 <sup>1</sup>	
<i>E. c. atroseptica</i> + <i>S. tritici</i> (Sequential stress)	Riband and consort	Trial 1	AUDPC-7	1314	1197	1171
<i>E. c. atroseptica</i> + <i>S. tritici</i> (Sequential stress)	Riband and consort	Trial 2	AUDPC-7	236	210	237
<i>E. c. atroseptica</i> + <i>B.graminis</i> f. sp. <i>Tritici</i> (Sequential stress)	Riband	Trial 1	AUDPC-2	101.8	62.1	61.2
<i>E. c. atroseptica</i> + <i>B.graminis</i> f. sp. <i>Tritici</i> (Sequential stress)	Consort	Trial 1	AUDPC-2	80.8	56.9	63
<i>S. tritici</i>	Riband and consort	Trial 1	AUDPC-7	1162		
<i>S. tritici</i>	Riband and consort	Trial 2	AUDPC-7	205		
<i>B.graminis</i> f. sp. <i>tritici</i>	Riband	Trial 1	AUDPC-2	46.4		
<i>B.graminis</i> f. sp. <i>tritici</i>	Consort	Trial 1	AUDPC-2	63.0		

AUDPC- 2 or 7, number of disease scores used to calculate the area under the disease progress curve, Trial 1- year 2000, Trial 2- year 2001

For raw data – Click here (.xlsx file)  
Reference- Newton *et al.*, 2004

**Note:** Values in the table represented as it is from the source article (without subjecting to calculation).

‘\*’ - For more information on parameters classification, please refer to ‘methodology’ tab.

‘\*\*’ - Bacterial concentrations are cells mL<sup>-1</sup> peel extract.

**Inference from the study:** Newton *et al.*, 2004 the study involves understanding the effect of bacteria (*E. carotovora* ssp. *atroseptica*; SCRI1039) from potato (*S. tuberosum* cv. morene and hermes) on fungal (*S. tritici* and *B. graminis* f. sp. *tritici*) -induced disease development in winter wheat (*T. aestivum* cv. consort and riband). Results indicate that the fungal infection was higher under combined stress than single stress. The *S. tritici* infection was higher at 10<sup>5</sup> bacterial concentration as compared to other treatments in the first trial when consort and riband grown together. The *B. graminis* f. sp. *tritici* infection was higher at 10<sup>5</sup> bacterial concentration in riband cultivar. The *B. graminis* f. sp. *tritici* infection was significantly different between 10<sup>5</sup> and 10<sup>1</sup> in the first trial in consort cultivar. It could be inferred that maximum fungal infection occurred at 10<sup>5</sup> bacterial concentration. The consort cultivar was the more tolerant to *B. graminis* f. sp. *tritici* infection than riband cultivar. **Overall results suggest that bacteria (*E. carotovora* ssp. *atroseptica*) affected the fungal (*S. tritici*) - induced disease when both riband and consort cultivar grown together. Moreover, bacteria (*E. carotovora* ssp. *atroseptica*) has also affected the fungal (*B. graminis* f. sp. *Tritici*) - induced disease when riband and consort cultivar grown individually.**