

Table S1. Temperature, precipitation, hours of leaf wetness and STB infection conditions (leaf wetness by “Weihsfen” sensor $\geq 98\%$ over more than 36h) in detail for the month May and June of the observed vegetation period at the trail locations Barlt, Futterkamp and Kluvensiek from 2019 to 2021.

	Year	May					June				
		T	PP	h of LF $\geq 98\%$	STB infections		T	PP	h of LF $\geq 98\%$	STB infections	
		(°C)	(l/m ²)	(h)	n (h of LW $\geq 98\%$)		(°C)	(l/m ²)	(%)	n (h of LW $\geq 98\%$)	
Barlt	2019	11	38	172	2	01.05. (108); 10.05. (64)	18	66	2	2	13.06. (64); 17.06. (54)
	2020	11	23	155	2	03.05. (113); 24.05. (42)	17	41	1	1	10.06. (163)
	2021	10	91	416	4	08.05. (111); 19.05. (207); 27.05. (42); 29.05. (56)	17	57	1	1	22.06. (63)
Kluvensiek	2019	10	30	73	2	10.05. (41); 23.05. (32)	18	56	3	3	12.06. (58); 16.06. (42); 21.06. (79)
	2020	12	31	148	2	02.05. (98); 14.05. (50)	17	63	3	3	05.06. (26); 14.06. (46); 19.06. (35)
	2021	10	108	307	4	06.05. (73); 19.05. (27); 25.05. (94); 29.05. (113)	18	118	2	2	06.06. (66); 24.06. (112)
Futterkamp	2019	10	67	272	3	14.05. (120); 24.05. (61); 30.05. (91)	18	76	4	4	01.06. (45); 09.06. (37); 17.06. (155); 23.06. (105)
	2020	11	29	124	2	02.05. (87); 14.05. (37)	16	100	2	2	15.06. (62); 21.06. (56)
	2021	11	108	330	3	01.05. (58); 07.05. (129); 16.05. (143)	18	66	1	1	31.06. (66)

T = Temperature; PP = Precipitation; LW = Leaf wetness

Table S2. Analyses of variance (ANOVAs) for the effect of treatment (untreated control, IPM, ISIP, xarvio®, HST), cultivar (“Reform”, “Ritmo”) and their interaction on the relative efficacy of yield, necrotization and disease severities of *Septoria tritici* blotch, powdery mildew, stripe rust, and leaf rust.

Relative efficacy	Effect	<i>df</i>	<i>F</i>	<i>p</i>
Yield	Cultivar	26	0.1187	0.7332
	Treatment	203	56.3937	< 0.0001
	Cultivar x Treatment	203	0.2732	0.8950
Necrotization	Cultivar	8	1.0137	0.3435
	Treatment	88	25.7087	< 0.0001
	Cultivar x Treatment	88	0.1995	0.9380
Septoria tritici blotch	Cultivar	14	0.3976	0.5385
	Treatment	136	101.6270	< 0.0001
	Cultivar x Treatment	136	0.1950	0.9406
Powdery mildew	Cultivar	5	0.5804	0.4805
	Treatment	52	31.5724	< 0.0001
	Cultivar x Treatment	52	0.9869	0.4229
Stripe rust	Cultivar	2	0.0035	0.9578
	Treatment	40	6.6905	0.0003
	Cultivar x Treatment	40	0.0033	1.0000
Leaf rust	Treatment	44	19.7410	< 0.0001

Note that “Cultivar” and the interaction between “Cultivar” and “Treatment” are not listed for leaf rust, due to absence of the disease severities in the cultivar “RGT Reform”