

Supplementary Materials

Table S1. Values distribution of the measured traits. W – the value of the Shapiro-Wilk normality test at $p \leq 0.05$.

Trait	Minimum – Maximum	Average \pm SD	W*	Skewness	Kurtosis
P ₂₀₁₁ hardened [%]	37.50 – 85.00	61.17 \pm 9.36	0.989	−0.03	0.18
P ₂₀₁₂ hardened [%]	25.00 – 63.33	41.41 \pm 7.95	0.986	0.24	0.14
P ₂₀₁₃ hardened [%]	29.17 – 81.67	61.22 \pm 10.35	0.951	−0.73	0.27
T ₂₀₁₁ hardened [%]	15.00 – 62.50	38.83 \pm 9.36	0.988	0.03	0.18
T ₂₀₁₂ hardened [%]	36.67 – 75.00	58.59 \pm 7.95	0.983	−0.24	0.14
T ₂₀₁₃ hardened [%]	18.33 – 70.83	38.78 \pm 10.35	0.951	0.73	0.27
Qy ₂₀₁₁ hardened	37.50 – 85.00	61.17 \pm 9.36	0.988	−0.03	0.18
Qy ₂₀₁₂ hardened	25.00 – 63.33	41.41 \pm 7.95	0.986	0.24	0.14
PI unhardened	0.55 – 2.38	1.25 \pm 0.36	0.981	0.48	0.47
PI hardened	0.36 – 2.03	1.11 \pm 0.33	0.985	0.21	0.48
PI _{ABS} unhardened	0.55 – 2.38	1.25 \pm 0.36	0.981	0.48	0.47
PI _{ABS} hardened	0.32 – 2.03	1.11 \pm 0.32	0.983	0.20	0.68
ABS/CS unhardened	447.17 – 712.25	540.45 \pm 54.77	0.874	0.35	0.75
ABS/CS hardened	531.33 – 759.50	307.92 \pm 42.97	0.939	0.16	0.89
TR _o /CS unhardened	373.31 – 515.71	437.64 \pm 25.98	0.951	0.65	0.23
TR _o /CS hardened	428.18 – 534.54	472.01 \pm 16.59	0.971	0.61	0.99
ET _o /CS unhardened	144.80 – 271.29	194.93 \pm 21.45	0.960	0.78	0.76
ET _o /CS hardened	187.29 – 235.84	219.21 \pm 7.69	0.919	−0.33	0.69
DI _o /CS unhardened	69.47 – 230.16	102.81 \pm 31.21	0.771	0.91	0.61
DI _o /CS hardened	89.31 – 240.54	135.91 \pm 29.69	0.900	0.37	0.59
ABS/CS _m unhardened	2268.75 – 3339.00	2972.07 \pm 195.93	0.951	−0.92	0.85
ABS/CS _m hardened	2072.75 – 3242.00	2836.24 \pm 209.57	0.966	−0.75	0.15
TR _o /CS _m unhardened	1556.50 – 2808.00	2431.62 \pm 229.80	0.927	−0.21	0.33
TR _o /CS _m hardened	1299.50 – 2703.00	2216.64 \pm 253.03	0.962	−0.83	0.31
ET _o /CS _m unhardened	779.80 – 1492.50	1082.29 \pm 135.90	0.989	0.34	0.11
ET _o /CS _m hardened	602.25 – 1360.33	1037.40 \pm 140.71	0.988	−0.31	0.57
DI _o /CS _m unhardened	447.17 – 712.25	540.45 \pm 54.77	0.874	0.35	0.73
DI _o /CS _m hardened	531.33 – 798.20	619.60 \pm 54.16	0.928	0.10	0.53
RC/CS _m unhardened	466.46 – 1196.15	970.97 \pm 147.14	0.955	−0.80	0.95
RC/CS _m hardened	446.86 – 1268.72	923.57 \pm 143.02	0.979	−0.54	−0.13
ABS/RC unhardened	2.64 – 5.22	3.16 \pm 0.43	0.832	0.25	0.27
ABS/RC hardened	2.59 – 3.74	3.07 \pm 0.24	0.975	0.59	0.42
TR _o /RC unhardened	2.21 – 3.49	2.56 \pm 0.22	0.919	0.35	0.59
TR _o /RC hardened	2.14 – 2.65	2.40 \pm 0.11	0.989	0.04	−0.33
ET _o /RC unhardened	0.95 – 1.99	1.14 \pm 0.14	0.717	0.18	0.35
ET _o /RC hardened	1.03 – 1.19	1.11 \pm 0.04	0.983	0.10	−0.67
DI _o /RC unhardened	0.40 – 1.72	0.61 \pm 0.22	0.724	0.57	0.54
DI _o /RC hardened	0.44 – 1.51	0.61 \pm 0.17	0.565	0.84	0.64

Table S2. Value and direction of correlation between the levels of the seedling damage caused by the *M. nivale* infection (P indexes) in three independent experiments (seasons).

	P₂₀₁₂	P₂₀₁₃	P_{2011–2013}	P_{2012–2013}
P ₂₀₁₁	−0.15	0.07	0.51	−0.03
P ₂₀₁₂		0.32	0.57	0.75
P ₂₀₁₃			0.78	0.86
P _{2011–2013}				0.84

Table S3. Value and direction of correlation between the values of the individual chlorophyll *a* fluorescence parameters, for which significant QTL regions have been found.

	Qy₂₁₂	PI_{UH}	PI_H	TR_o/CS_{UH}	TR_o/CS_H	ABS/CS_H	ABS/CS_m_{UH}	PI_{ABS}_{UH}
PI_{UH}	0.11							
PI_H	−0.19	0.35						
TR_o/CS_{UH}	0.23	−0.47	−0.32					
TR_o/CS_H	0.31	−0.19	−0.71	0.31				
ABS/CS_H	0.27	−0.88	−0.27	0.87	0.35			
ABS/CS_m_{UH}	0.03	0.74	0.37	−0.28	−0.30	−0.36		
PI_{ABS}_{UH}	0.11	1.00	0.35	−0.47	−0.19	−0.27	0.74	
ABS/RC_H	0.16	−0.34	−0.90	0.31	0.72	0.87	−0.36	−0.34