

Supplementary material

This document include supplementary information to the article "Factors affecting the distribution of Pine Pitch Canker in Northern Spain".

Table S1. Summary of the selected GLM models for each of the three symptoms in each of the four variables groups, according to AIC. Only models with a difference between their AIC and the best fitting model lower than two are shown.

	AIC	Weights
Climate		
Canker		
Canker ~ 1 + Tm_sum + Tm_win	-40.8	0.06
Canker ~ 1 + Tm_sum + Tmax	-40.2	0.04
Canker ~ 1	-40.1	0.04
Canker ~ 1 + Psum + Pwin	-39.9	0.04
Defoliation		
Defoliation ~ 1 + Pwin	-43.9	0.09
Defoliation ~ 1 + Tm_sum + Pwin	-43.4	0.07
Defoliation ~ 1 + Psum	-42.7	0.05
Defoliation ~ 1 + Tm_sum + Psum	-42.3	0.04
Dieback		
Dieback ~ 1 + Pwin	-76.1	0.14
TopograpHic		
Canker		
Canker ~ 1 + distCoast	-41.8	0.29
Canker ~ 1 + distCoast + Slope	-41.7	0.28
Canker ~ 1	-40.1	0.12
Defoliation		
Defoliation ~ 1	-39.2	0.4
Defoliation ~ 1 + Slope	-37.3	0.15
Dieback		
Dieback ~ 1	-69	0.34
Dieback ~ 1 + Slope	-67.5	0.16
Dieback ~ 1 + distCoast	-67.4	0.16
Soil		
Canker		
Canker ~ 1 + Silt + Conductivity + P + N	-41.9	0.02
Canker ~ 1 + Silt + N	-40.9	0.02
Canker ~ 1 + Silt + Conductivity + N	-40.7	0.02
Canker ~ 1 + Silt + P + N	-40.5	0.02
Canker ~ 1 + Conductivity + P + N	-40.3	0.02
Canker ~ 1 + Conductivity + N	-40.1	0.02
Canker ~ 1 + Silt	-40.1	0.01
Canker ~ 1	-40.1	0.01

Canker ~ 1 + Silt + P	-40.1	0.01
Defoliation		
Defoliation ~ 1	-39.2	0.04
Defoliation ~ 1 + Silt	-38.4	0.03
Defoliation ~ 1 + CN	-38	0.02
Defoliation ~ 1 + K	-37.5	0.02
Defoliation ~ 1 + MO	-37.3	0.02
Defoliation ~ 1 + P	-37.3	0.02
Defoliation ~ 1 + MO + CN	-37.3	0.01
Dieback		
Dieback ~ 1 + Conductivity	-69.6	0.03
Dieback ~ 1 + Conductivity + CF	-69.5	0.03
Dieback ~ 1 + CF	-69.1	0.02
Dieback ~ 1	-69	0.02
Dieback ~ 1 + Conductivity + Clay	-68.2	0.02
Dieback ~ 1 + P	-67.9	0.01
Dieback ~ 1 + CF + P	-67.9	0.01
Dieback ~ 1 + Conductivity + CF + Clay	-67.9	0.01
Dieback ~ 1 + pH + Conductivity	-67.8	0.01
Dieback ~ 1 + Conductivity + P	-67.7	0.01
Stand characteristics		
Canker		
Canker ~ 1	-40.1	0.31
Defoliation		
Defoliation ~ 1	-39.2	0.15
Defoliation ~ 1 + Perimeter	-39.1	0.14
Defoliation ~ 1 + Height	-38.5	0.1
Defoliation ~ 1 + Perimeter + Canopy	-38.2	0.09
Defoliation ~ 1 + Height + Canopy	-38	0.08
Defoliation ~ 1 + Age + Perimeter	-37.7	0.07
Defoliation ~ 1 + Canopy	-37.6	0.07
Defoliation ~ 1 + Age	-37.3	0.06
Dieback		
Dieback ~ 1 + Age + Height + Canopy	-73.1	0.24
Dieback ~ 1 + Age + Perimeter + Canopy	-71.9	0.13
Dieback ~ 1 + Height + Canopy	-71.4	0.1
Dieback ~ 1 + Age + Canopy	-71.4	0.1

Table S2. Summary of the Pearson residual against the fitted model variables.

		Canker		Defoliation		Dieback	
		Test stat	P value	Test stat	P value	Test stat	P value
Climate	Tmax	0.056	0.813	0.002	0.966	0.006	0.94
	Tmin	0.117	0.733	0.014	0.906	0.008	0.93
	Tm_sum	0.008	0.928	0.001	0.975	0.002	0.967
	Tm_win	0.006	0.939	0.02	0.964	0.001	0.98
	Psum	0.012	0.912	0.216	0.642	0.001	0.972
	Pwin	0.003	0.958	0.07	0.792	0	0.994
	Frost	0.016	0.899	0.038	0.906	0.01	0.919
TopograpHic	Slope	0.016	0.9	0.093	0.76	0.006	0.937
	Elevation	0.038	0.846	0.004	0.952	0.001	0.976
	distCoast	0.089	0.765	0.088	0.767	0.017	0.896
Soil	pH	0.016	0.9	0.013	0.909	0.013	0.909
	Conductivity	0.006	0.937	0.025	0.874	0.003	0.954
	Silt	0.115	0.734	0.006	0.938	0	0.988
	Clay	0	0.985	0.068	0.794	0.003	0.955
	CF	0.026	0.872	0.102	0.749	0.042	0.838
	K	0.001	0.976	0.028	0.866	0.018	0.894
	P	0.015	0.904	0.003	0.957	0.119	0.73
	Mg	0.008	0.927	0.067	0.796	0.017	0.896
	CN	0.025	0.875	0.008	0.927	0.001	0.973
	N	0.005	0.943	0.003	0.955	0.017	0.897
Stand characteristics	Canopy	0.003	0.96	0.041	0.84	0.023	0.879
	Age	0	0.992	0.025	0.874	0.016	0.9
	Height	0.018	0.893	0.01	0.92	0.002	0.961
	Perimeter	0.029	0.864	0.001	0.98	0.002	0.965