

Pathogenicity and histological response of alder to *Phytophthora* and *Halophytophthora* species

Cristina Vieites-Blanco^{1,2*}, Michele Colangelo^{3,4}, J. Julio Camarero⁴, Maria Caballol^{1,2}, Francisco José García Breijo⁵, Dora Štraus^{1,2} & Jonàs Oliva^{1,2}

¹Dept. Agricultural and Forest Sciences and Engineering, University of Lleida, 25198, Lleida, Spain

²Joint Research Unit CTFC – Agrotecnio, 25198, Lleida, Spain

³School of Agricultural, Forest, Food and Environmental Sciences, Univ. Basilicata, Potenza, Italy

⁴Instituto Pirenaico de Ecología (IPE-CSIC), Zaragoza, Spain

⁵Departamento de Ecosistemas Agroforestales. Escuela Técnica Superior de Ingeniería Agronómica y del Medio Natural (ETSIAMN) Universitat Politècnica de València (UPV), 46022, València, Spain

*Corresponding author. E-mail address: cristina.vieites@udl.cat

ESM 2 Factor loadings from the principal component analysis (PCA) of the variables measured in alder saplings inoculated with different *Phytophthora* and *Halophytophthora* species. Key: 'AB, S', Astra blue and Safranine staining; 'CW', Calcofluor white staining

	Component	
	1	2
Lesion length	-0.62	0.31
Hyphae in phloem (AB,S)	-0.52	-0.39
Tyloses	-0.40	-0.43
Altered ray parenchyma	-0.44	-0.02
Altered fibers and vessels	-0.28	0.48
Altered axial parenchyma	-0.51	0.50
Hyphae in xylem (AB,S)	-0.41	-0.60
Hyphae (CW)	-0.79	-0.08
Lignin	-0.82	-0.01
Sieve plates	0.70	-0.17