

Table S1. Isolation details and GenBank accession numbers of representative *Phytophthora* isolates obtained by baiting of rhizosphere soil samples from the three sampling areas.

<i>Phytophthora</i> species	Isolate code	Host	Sampling area and Municipality (City, Province, State)	Kind of ecosystem	Isolation date	GenBank accession no. of ITS sequences
<i>P. bilorbang</i>	I-3K2A	<i>Platanus orientalis</i>	Complesso Speleologico Villasmundo - S. Alfio RNR (Melilli, Siracusa, Italy)	Natural	March-2019	OL679976
<i>P. citrophthora</i>	SER_3_2K1a	<i>Citrus</i> × <i>sinensis</i> var. navelina	Citrus Orchard - Tenuta Serravalle (Mineo, Catania, Italy)	Agricultural	May-2019	OL679977
<i>P. cryptogea</i>	I-2K19C	<i>Salix pedicellata</i>	Complesso Speleologico Villasmundo - S. Alfio RNR (Melilli, Siracusa, Italy)	Natural	March-2019	OL679978
	I-2K13A	<i>S. pedicellata</i>	Complesso Speleologico Villasmundo - S. Alfio RNR (Melilli, Siracusa, Italy)	Natural	March-2019	OL679979
<i>P. gonapodyides</i>	IV-26A	<i>Quercus ilex</i>	Complesso Speleologico Villasmundo - S. Alfio RNR (Melilli, Siracusa, Italy)	Natural	March-2019	OL679980
<i>P. multivora</i>	VII-1K1B	<i>Olea europea</i>	Botanical Garden of Catania (Catania, Italy)	Semi-natural	April-2019	OL679981
	IX-1K5A	<i>Sterculia diversifolia</i>	Botanical Garden of Catania (Catania, Italy)	Semi-natural	April-2019	OL679982
	X-1K4A	<i>Phytolacca dioica</i>	Botanical Garden of Catania (Catania, Italy)	Semi-natural	April-2019	OL679983
	V-1K1A	<i>Araucaria cookii</i>	Botanical Garden of Catania (Catania, Italy)	Semi-natural	April-2019	OL679984
	II-1K8A	<i>Zelkova sicula</i>	Botanical Garden of Catania (Catania, Italy)	Semi-natural	April-2019	OL679985
	XII-1K1A	<i>Q. suber</i>	Botanical Garden of Catania (Catania, Italy)	Semi-natural	April-2019	OL679986
<i>P. nicotianae</i>	VII-1K3D	<i>O. europea</i>	Botanical Garden of Catania (Catania, Italy)	Semi-natural	April-2019	OL679987
	V-1K6A	<i>A. cookii</i>	Botanical Garden of Catania (Catania, Italy)	Semi-natural	April-2019	OL679988
	XII-1K2A	<i>Q. suber</i>	Botanical Garden of Catania (Catania, Italy)	Semi-natural	April-2019	OL679989
	X-1K8A	<i>P. dioica</i>	Botanical Garden of Catania (Catania, Italy)	Semi-natural	April-2019	OL679990
	SER_3_1K4b	<i>C. × sinensis</i> Tarocco / <i>C. × aurantium</i> rootstock	Citrus Orchard - Tenuta Serravalle (Mineo, Catania, Italy)	Agricultural	May-2019	OL679991
<i>P. parvispora</i>	IV-1K3A	<i>Coffea arabica</i>	Botanical Garden of Catania (Catania, Italy)	Semi-natural	April-2019	OL679992
<i>P. plurivora</i>	IV-4K9D	<i>Q. ilex</i>	Complesso Speleologico Villasmundo - S. Alfio RNR (Melilli, Siracusa, Italy)	Natural	March-2019	OL679993
Cont. Table S1						
<i>Phytophthora</i> species	Isolate code	Host	Sampling area and Municipality (City, Province, State)	Kind of ecosystem	Isolation date	GenBank accession no. of ITS sequences
<i>P. plurivora</i>	IV-4K14B	<i>Q. ilex</i>	Complesso Speleologico Villasmundo - S. Alfio RNR (Melilli, Siracusa, Italy)	Natural	March-2019	OL679994
<i>P. pseudocryptogea</i>	I-1K10A	<i>S. pedicellata</i>	Complesso Speleologico Villasmundo - S. Alfio RNR (Melilli, Siracusa, Italy)	Natural	March-2019	OL679995
	I-1K11A	<i>S. pedicellata</i>	Complesso Speleologico Villasmundo - S. Alfio RNR (Melilli, Siracusa, Italy)	Natural	March-2019	OL679996
	I-1K5A	<i>S. pedicellata</i>	Complesso Speleologico Villasmundo - S. Alfio RNR (Melilli, Siracusa, Italy)	Natural	March-2019	OL679997

Table S3. Additional oomycete taxa recognized by Amplicon Sequence Variants (AVSs) recorded in this study, and match ranked by number of reads across the Illumina-positive samples from three surveyed areas in Sicily.

	No. reads of per type of Illumina-positive sample (S = soil / R = roots) from the Nature Reserve (sample code NR_1903_S'')								No. reads of per type of Illumina-positive sample (S = soil / R = roots) from the Botanical Garden (sample code BG_1903_S'')		No. reads of per type of Illumina-positive sample (S = soil / R = roots) from the Citrus Orchard							
	6		7		8		9		6		NO POSITIVE SAMPLES						Total n. of reads per species	
Identified taxon (% identity)	S	R	S	R	S	R	S	R	S	R							S	R
<i>Peronospora elucastri</i> (100%)	-	56085	-	-	-	-	-	-	-	-							-	56085
<i>Peronospora viciae</i>	-	-	-	-	-	-	2783	-	-	-							2783	
<i>Plasmopara</i> sp. (98.19%)	-	-	16220	-	-	-	-	-	-	-							16220	-
<i>Plasmopara</i> sp. (98.19%)	-	-	10946	-	-	-	-	-	-	-							10946	-
<i>Hyaloperonospora</i> sp. (99.52)	-	-	-	-	-	-	-	-	-	4668							-	4668
<i>Peronospora</i> sp. (99.46%)	-	4585	-	-	-	-	-	-	-	-							-	4585
<i>Hyaloperonospora lunariae</i> (100%)	-	3458	-	-	-	-	-	-	-	-							-	3458
<i>Phytophthora psycrophila</i> variant (99.43%)	-	-	-	-	2561	-	-	-	-	-							2561	-