

**Table S2. Sources of genome data**

Species	Source (Genbank unless specified otherwise)
<i>Achlya hypogyna</i>	GCA_002081595.1
<i>Albugo candida</i>	GCA_001078535.1
<i>Albugo laibachii</i>	GCA_902706625.1
<i>Aphanomyces astaci</i>	GCA_000520075.1
<i>Aphanomyces invadans</i>	GCA_000520115.1, GCA_003546525.1
<i>Aphanomyces stellatus</i>	GCA_009835185.1, GCA_900243725.1, GCA_900708865.1
<i>Bremia lactucae</i>	GCA_004359215.1
<i>Hyaloperonospora arabidopsidis</i>	GCA_000173235.2
<i>Lagenidium giganteum</i>	GCA_002286825.1
<i>Nothophytophthora</i>	GCA_001712635.2
<i>Paralagenidium karlingii</i>	GCA_002980415.1
<i>Peronospora effusa</i>	GCA_003843895.1
<i>Phytophthora capsici</i>	GCA_000325885.1
<i>Phytophthora cinnamomi</i>	Joint Genome Institute (CBS 144.22)
<i>Phytophthora infestans</i>	GCA_000142945.1 and (17)
<i>Phytophthora palmivora</i>	GCA_002911725.1
<i>Phytophthora parasitica</i>	GCA_000247585.2
<i>Phytophthora ramorum</i>	GCA_000149735.1
<i>Phytophthora sojae</i>	GCA_000149755.2
<i>Phytopythium vexans</i>	GCA_000387545.2, GCA_003413675.1
<i>Pilasporangium sp.</i>	GCA_001600495.1
<i>Plasmopara halstedii</i>	GCA_900000015.1
<i>Plasmopara viticola</i>	GCA_001695595.3
<i>Pythium aphanidermatum</i>	GCA_000387445.2
<i>Pythium arrhenomanes</i>	GCA_000387505.2
<i>Pythium insidiosum</i>	GCA_001029375.1, GCA_000764265.1
<i>Pythium irregulare</i>	GCA_000387425.2
<i>Pythium iwayamai</i>	GCA_000387465.2
<i>Pythium oligandrum</i>	GCA_005966545.1, GCA_001573145.1
<i>Pythium splendens</i>	GCA_006386115.1
<i>Pythium ultimum</i>	GCA_000143045.1
<i>Salisapilia sapeloensis</i>	PRJNA487262
<i>Saprolegnia diclina</i>	GCA_000281045.1
<i>Saprolegnia parasitica</i>	GCA_000151545.2
<i>Thraustotheca clavata</i>	GCA_002081575.1