Supplementary Material

Supplementary Table 1: Indicator OTUs for different plant growth stages and peels

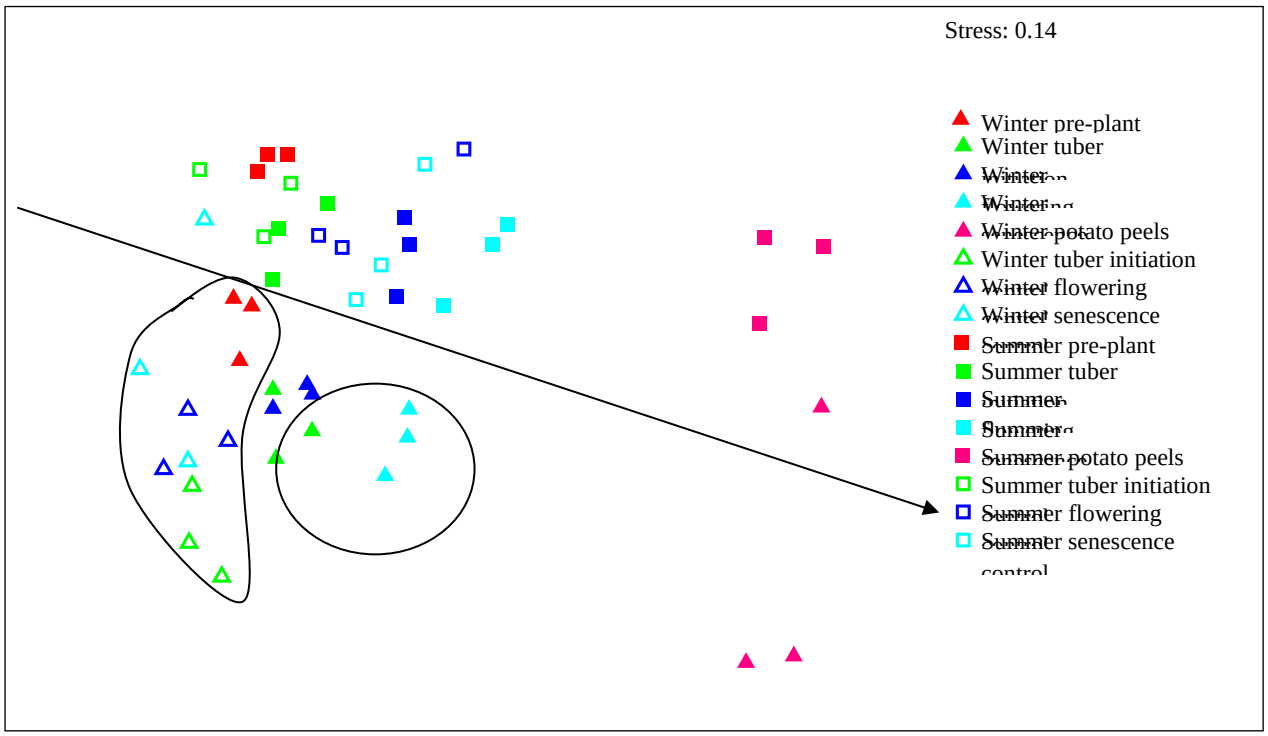
Taxonomy	Stage	Indval	P value	frequency
Otu00002.Ascomycota.Dothideomycetes.Pleosporales.Pleosporales_family_Pleosporaceae.Peyronellaea glomerata	T1	0.448198	0.016	24
Otu00005.Ascomycota.Sordariomycetes.Hypocreales.Nectriaceae.Fusarium equiseti	T1	0.483205	0.038	24
Otu00006.Ascomycota.Dothideomycetes.Pleosporales.Pleosporaceae.Setophoma terrestris	P	0.662624	0.011	24
Otu00007.Ascomycota.Dothideomycetes.Pleosporales.Pleosporaceae.Alternaria solani	T3	0.900544	0.034	24
Otu00013.Ascomycota.Sordariomycetes.Order_Incertae_sedis.Glomerellaceae.Colletotrichum coccodes	T3	0.75632	0.01	24
Otu00027.Ascomycota.Orbiliomycetes.Orbiliales.Orbiliaceae.Arthrobotrys.Arthrobotrys oligospora	T3	0.645161	0.039	21
Otu00030.Ascomycota.Sordariomycetes.Hypocreales.Nectriaceae.Fusarium nelsonii	T1	0.505376	0.022	21
Otu00032.Ascomycota.Sordariomycetes.Hypocreales.Hypocreaceae.Acremonium persicinum	T1	0.697995	0.016	19
Otu00033.Ascomycota.Dothideomycetes.Pleosporales.Pleosporales_family_Pleosporaceae. Ampelomyces sp.	T2	0.653439	0.031	23
Otu00034.Ascomycota.Sordariomycetes.Sordariales.Chaetomiaceae.Thielavia terricola	T1	0.644719	0.005	19
Otu00043.Ascomycota.Sordariomycetes.Sordariales.Chaetomiaceae.Chaetomium globosum	T1	0.711443	0.002	18
Otu00044.Ascomycota.Dothideomycetes.Pleosporales.Pleosporales.Tubeufiaceae.Helicoma isiola	T1	0.510101	0.019	19
Otu00046.Ascomycota.Sordariomycetes.Hypocreales.Nectriaceae.Fusicolla acetilerea	T2	0.454839	0.041	19
Otu00052.Ascomycota.Dothideomycetes.Pleosporales.Pleosporales_family_Incertae_sedis.Didymella sp.	T2	0.547945	0.004	22
Otu00053.Ascomycota.Sordariomycetes.Hypocreales.Hypocreales_family_Incertae_sedis.Myrothecium verrucaria	T1	0.582569	0.003	19
Otu00055.Ascomycota.Sordariomycetes.Hypocreales.Nectriaceae.Fusarium oxysporum	T1	0.552885	0.012	18
Otu00057.Ascomycota.Dothideomycetes.Pleosporales.Pleosporaceae.Curvularia trifoli	T1	0.661616	0.011	18
Otu00058.Ascomycota.Eurotiomycetes.Eurotiales.Trichocomaceae.Aspergillus.Aspergillus granulosus	T1	0.728205	0.013	19
Otu00066.Ascomycota.Sordariomycetes.Sordariales.Chaetomiaceae.Chaetomium.Chaetomium sp	T1	0.613333	0.048	16
Otu00071.Ascomycota.unclassified.unclassified.unclassified.unclassified.unclassified	T3	0.582524	0.028	15
Otu00073.Zygomycota.Zygomycota_class_Incertae_sedis.Mucorales.Rhizopodaceae.Rhizopus oryzae	T1	0.569892	0.024	14
Otu00077.Ascomycota.Dothideomycetes.Pleosporales.Pleosporaceae.Cochliobolus sp.	T1	0.556962	0.02	16
Otu00082.Ascomycota.Dothideomycetes.Pleosporales.Cucurbitariaceae.Pyrenochaetopsis sp.	T1	0.594203	0.005	18
Otu00091.Ascomycota.unclassified.unclassified.unclassified.unclassified.unclassified	T1	0.666667	0.004	16
Taxonomy	Stage	Indval	P value	frequency

Otu00107.Ascomycota.Dothideomycetes.Pleosporales.Montagnulaceae.unclassified Montagnulaceae.Montagnulaceae sp	T1	0.491453	0.028	10
Otu00108.Basidiomycota.Tremellomycetes.Tremellales.Tremellales_family_Incertae_sedis.Dioszegia takashimae	T3	0.564103	0.05	8
Otu00161.Ascomycota.Dothideomycetes.Pleosporales.Pleosporaceae.Curvularia lunata	T1	0.535714	0.012	8
Otu00194.Ascomycota.Sordariomycetes.Trichosphaeriales.Incertae_sedis.Nigrospora oryzae	T1	0.5	0.027	6
Otu00195.Ascomycota.Sordariomycetes.Hypocreales.Nectriaceae.Fusarium polyphialidicum	T1	0.583333	0.014	5
Otu00222.Zygomycota.Zygomycota_class_Incertae_sedis.Mucorales.Rhizopodaceae.Rhizopus microsporus	T1	0.5	0.035	3
Otu00232.Ascomycota.Sordariomycetes. Microascales. Halosphaeriaceae.Remispora stellata	T1	0.5	0.042	3
Otu00234.Ascomycota.unclassified.unclassified.unclassified.unclassified.unclassified	T2	0.5	0.041	3
Otu00252.Basidiomycota.Tremellomycetes.Tremellales_family_Incertae_sedis.Cryptococcus paraflavus	T3	0.5	0.044	3

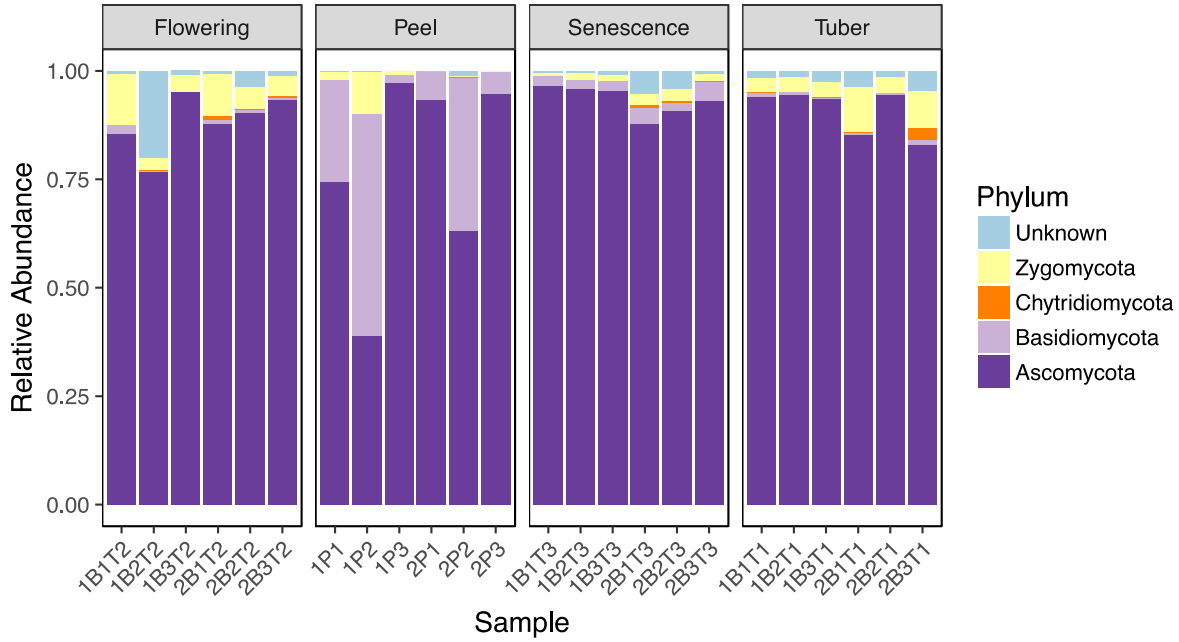
Key:

Growth stages: T1 – Tuber initiation
T2 – Flowering
T3 – Senescence
P – Potato peels

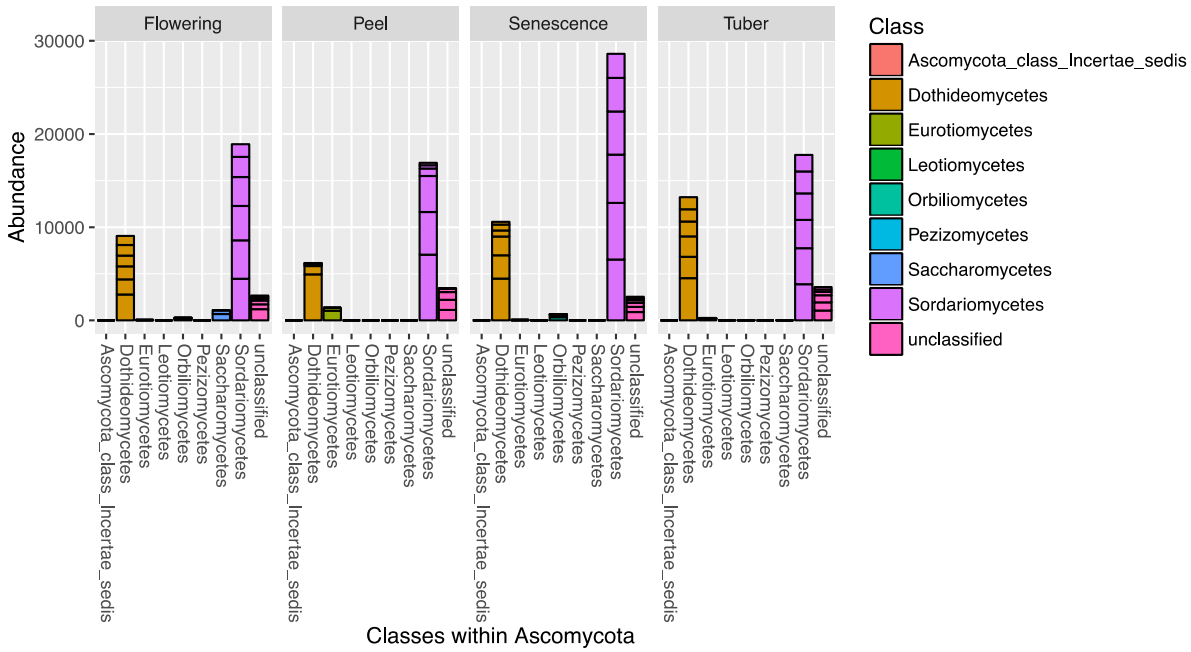
Supplementary figures



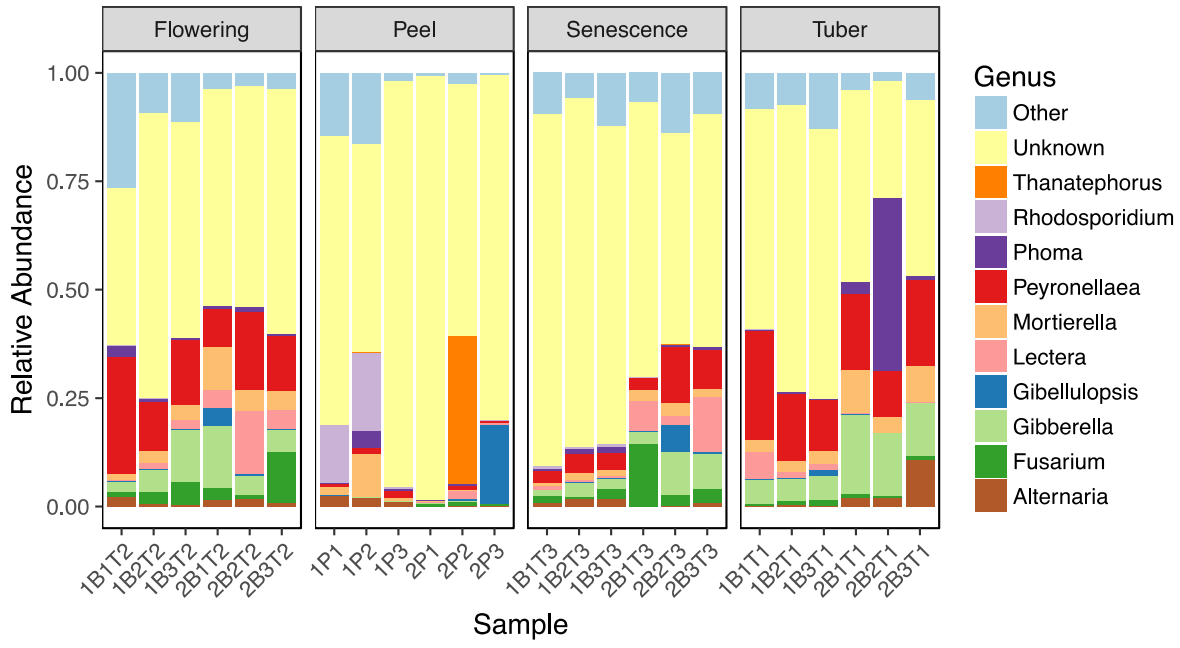
Supplementary Fig. 1: NMDS ordination plot showing the relationship between rhizosphere and bulk soil fungal communities from ARISA profiles in seasons and at each sampling time point. Three samples per sampling time point were presented on the NMDS ordination plot, each point representing an average of four samples. ▲ represents winter communities and ■ represents summer communities. The arrow shows direction of plant growth.



Supplementary Fig. 2: Relative abundance of fungal communities in the potato rhizosphere at phylum level.



Supplementary Fig. 3: Relative abundance of fungal classes belonging to the ascomycetes in the potato rhizosphere.



Supplementary Fig. 4: Relative abundance of fungal communities in the potato rhizosphere at genus level.