**Table S1.** Basic information of the selected 45 plant species.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Species** | **Family** | **Relative abundance (%)** | **Number of sampled individuals** | **Number of saplings** | **Number of juveniles** | **Number of adults** |
| *Castanopsis eyrei* | *Fagaceae* | 0.05 | 5 | 2 | 2 | 1 |
| *Exbucklandia tonkinensis* | *Hamamelidaceae* | 0.05 | 5 | 2 | 2 | 1 |
| *Neolitsea chui* | *Lauraceae* | 0.05 | 10 | 8 | 2 | 0 |
| *Lithocarpus haipinii* | *Fagaceae* | 0.06 | 12 | 6 | 1 | 5 |
| *Artocarpus hypargyreus* | *Moraceae* | 0.06 | 4 | 0 | 0 | 4 |
| *Magnolia figo* | *Magnoliaceae* | 0.06 | 11 | 6 | 2 | 3 |
| *Toxicodendron succedaneum* | *Anacardiaceae* | 0.06 | 7 | 3 | 2 | 2 |
| *Madhuca hainanensis* | *Sapotaceae* | 0.07 | 15 | 9 | 3 | 3 |
| *Ficus hirta* | *Moraceae* | 0.07 | 12 | 5 | 4 | 3 |
| *Eriobotrya fragrans* | *Rosaceae* | 0.07 | 12 | 7 | 5 | 0 |
| *Glochidion wrightii* | *Phyllanthaceae* | 0.07 | 5 | 4 | 1 | 0 |
| *Engelhardtia roxburghiana* | *Juglandaceae* | 0.07 | 11 | 11 | 0 | 0 |
| *Bridelia tomentosa* | *Phyllanthaceae* | 0.07 | 14 | 5 | 4 | 5 |
| *Croton lachnocarpus* | *Euphorbiaceae* | 0.07 | 10 | 10 | 0 | 0 |
| *Pentaphylax euryoides* | *Pentaphylacaceae* | 0.07 | 10 | 3 | 3 | 4 |
| *Semiliquidambar cathayensis* | *Altingiaceae* | 0.48 | 15 | 8 | 5 | 2 |
| *Reevesia thyrsoidea* | *Malvaceae* | 0.51 | 16 | 6 | 5 | 5 |
| *Litsea rotundifolia* | *Lauraceae* | 0.54 | 12 | 4 | 4 | 4 |
| *Ternstroemia gymnanthera* | *Pentaphylacaceae* | 0.56 | 10 | 9 | 1 | 0 |
| *Magnolia fordiana* | *Magnoliaceae* | 0.57 | 13 | 9 | 3 | 1 |
| *Lithocarpus lohangwu* | *Fagaceae* | 0.60 | 14 | 7 | 2 | 5 |
| *Gardenia jasminoides* | *Rubiaceae* | 0.61 | 11 | 5 | 4 | 2 |

**Table S1.** Continued

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Species** | **Family** | **Relative abundance (%)** | **Number of sampled individuals** | **Number of saplings** | **Number of juveniles** | **Number of adults** |
| *Eurya hebeclados* | *Pentaphylacaceae* | 0.61 | 12 | 7 | 4 | 1 |
| *Ormosia glaberrima* | *Leguminosae* | 0.62 | 3 | 1 | 0 | 2 |
| *Garcinia multiflora* | *Clusiaceae* | 0.62 | 6 | 3 | 1 | 2 |
| *Syzygium kwangtungense* | *Myrtaceae* | 0.63 | 17 | 5 | 7 | 5 |
| *Ilex memecylifolia* | *Aquifoliaceae* | 0.64 | 16 | 8 | 3 | 5 |
| *Eurya acuminatissima* | *Pentaphylacaceae* | 0.67 | 14 | 5 | 8 | 1 |
| *Daphniphyllum pentandrum* | *Daphniphyllaceae* | 0.67 | 9 | 4 | 2 | 3 |
| *Lithocarpus litseifolius* | *Fagaceae* | 0.68 | 7 | 2 | 1 | 4 |
| *Altingia chinensis* | *Altingiaceae* | 1.56 | 13 | 8 | 1 | 4 |
| *Schima superba* | *Theaceae* | 1.56 | 11 | 5 | 3 | 3 |
| *Aidia canthioides* | *Rubiaceae* | 1.65 | 15 | 5 | 6 | 4 |
| *Distylium racemosum* | *Hamamelidaceae* | 1.81 | 16 | 8 | 3 | 5 |
| *Litsea acutivena* | *Lauraceae* | 1.84 | 15 | 8 | 2 | 5 |
| *Myrsine seguinii* | *Primulaceae* | 2.42 | 11 | 3 | 3 | 5 |
| *Lindera chunii* | *Lauraceae* | 2.43 | 19 | 10 | 5 | 4 |
| *Antidesma venosum* | *Phyllanthaceae* | 2.80 | 13 | 8 | 2 | 3 |
| *Machilus breviflora* | *Lauraceae* | 2.87 | 15 | 7 | 3 | 5 |
| *Xanthophyllum hainanense* | *Polygalaceae* | 2.97 | 18 | 7 | 5 | 6 |
| *Itea chinensis* | *Iteaceae* | 3.13 | 15 | 8 | 2 | 5 |
| *Ardisia quinquegona* | *Primulaceae* | 3.37 | 10 | 4 | 3 | 3 |

**Table S1.** Continued

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Species** | **Family** | **Relative abundance (%)** | **Number of sampled individuals** | **Number of saplings** | **Number of juveniles** | **Number of adults** |
| *Litsea elongata* | *Lauraceae* | 3.93 | 12 | 4 | 3 | 5 |
| *Neolitsea phanerophlebia* | *Lauraceae* | 6.65 | 13 | 7 | 1 | 5 |
| *Cryptocarya concinna* | *Lauraceae* | 10.74 | 15 | 9 | 1 | 5 |

**Table S2.** Basic information of pathogens according to FunGuild assignment.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| phylum | class | order | family | genus | species |
| *Ascomycota* | *Dothideomycetes* | *Capnodiales* | *Teratosphaeriaceae* | *Catenulostroma* | *Catenulostroma\_protearum* |
| *Basidiomycota* | *Agaricomycetes* | *Cantharellales* | *Ceratobasidiaceae* | *Thanatephorus* |  |
| *Ascomycota* | *Dothideomycetes* | *Pleosporales* | *Pleosporaceae* | *Pithomyces* | *Pithomyces\_maydicus* |
| *Basidiomycota* | *Agaricomycetes* | *Cantharellales* | *Ceratobasidiaceae* | *Thanatephorus* |  |
| *Ascomycota* | *Sordariomycetes* | *Magnaporthales* | *Magnaporthaceae* | *Mycoleptodiscus* | *Mycoleptodiscus\_sp* |
| *Ascomycota* | *Sordariomycetes* | *Magnaporthales* | *Magnaporthaceae* | *Mycoleptodiscus* | *Mycoleptodiscus\_sp* |
| *Ascomycota* | *Sordariomycetes* | *Magnaporthales* | *Magnaporthaceae* | *Mycoleptodiscus* | *Mycoleptodiscus\_sp* |
| *Ascomycota* | *Sordariomycetes* | *Xylariales* | *Amphisphaeriaceae* | *Pestalotiopsis* |  |
| *Ascomycota* | *Sordariomycetes* | *Hypocreales* | *Nectriaceae* | *Calonectria* |  |
| *Ascomycota* | *Sordariomycetes* | *Hypocreales* | *Nectriaceae* | *Calonectria* | *Calonectria\_hongkongensis* |
| *Ascomycota* | *Dothideomycetes* | *Venturiales* | *Venturiaceae* | *Rhizosphaera* |  |
| *Ascomycota* | *Dothideomycetes* | *Capnodiales* | *Teratosphaeriaceae* | *Hortaea* | *Hortaea\_acidophila* |
| *Ascomycota* | *Sordariomycetes* | *Hypocreales* | *Nectriaceae* | *Calonectria* | *Calonectria\_hongkongensis* |
| *Ascomycota* | *Sordariomycetes* | *Magnaporthales* | *Magnaporthaceae* | *Mycoleptodiscus* | *Mycoleptodiscus\_sp* |
| *Ascomycota* | *Sordariomycetes* | *Hypocreomycetidae\_ord\_Incertae\_sedis* | *Plectosphaerellaceae* | *Verticillium* | *Verticillium\_leptobactrum* |
| *Ascomycota* | *Sordariomycetes* | *Hypocreales* | *Nectriaceae* | *Cylindrocladiella* |  |
| *Ascomycota* | *Sordariomycetes* | *Hypocreomycetidae\_ord\_Incertae\_sedis* | *Plectosphaerellaceae* | *Verticillium* |  |
| *Ascomycota* | *Dothideomycetes* | *Capnodiales* | *Teratosphaeriaceae* | *Readeriella* |  |
| *Ascomycota* | *Leotiomycetes* | *Helotiales* | *Helotiales\_fam\_Incertae\_sedis* | *Rhexocercosporidium* | *Rhexocercosporidium\_sp* |
| *Ascomycota* | *Sordariomycetes* | *Hypocreales* | *Nectriaceae* | *Calonectria* |  |
| *Ascomycota* | *Dothideomycetes* | *Capnodiales* | *Teratosphaeriaceae* | *Readeriella* |  |
| *Ascomycota* | *Dothideomycetes* | Dothideomycetidae*\_ord\_Incertae\_sedis* | *Parodiopsidaceae* | *Perisporiopsis* | *Perisporiopsis\_sp* |

Table S2. Continued

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| phylum | class | order | family | genus | species |
| *Ascomycota* | *Dothideomycetes* | *Botryosphaeriales* | *Botryosphaeriaceae* | *Guignardia* | *Guignardia\_camelliae* |
| *Ascomycota* | *Dothideomycetes* | *Capnodiales* | *Teratosphaeriaceae* | *Devriesia* | *Devriesia\_strelitziicola* |
| *Ascomycota* | *Sordariomycetes* | *Hypocreales* | *Nectriaceae* | *Calonectria* |  |
| *Ascomycota* | *Sordariomycetes* | *Hypocreales* | *Nectriaceae* | *Haematonectria* | *Haematonectria\_sp* |
| *Ascomycota* | *Dothideomycetes* | *Capnodiales* | *Teratosphaeriaceae* | *Devriesia* | *Devriesia\_strelitziicola* |
| *Ascomycota* | *Sordariomycetes* | *Hypocreomycetidae\_ord\_Incertae\_sedis* | *Plectosphaerellaceae* | *Gibellulopsis* | *Gibellulopsis\_piscis* |
| *Ascomycota* | *Dothideomycetes* | *Capnodiales* | *Teratosphaeriaceae* | *Devriesia* | *Devriesia\_sp* |
| *Ascomycota* | *Dothideomycetes* | *Capnodiales* | *Mycosphaerellaceae* | *Ramularia* | *Ramularia\_rumicis-crispi* |
| *Ascomycota* | *Sordariomycetes* | *Magnaporthales* | *Magnaporthaceae* | *Mycoleptodiscus* | *Mycoleptodiscus\_sp* |
| *Ascomycota* | *Sordariomycetes* | *Xylariales* | *Amphisphaeriaceae* | *Pestalotiopsis* | *Pestalotiopsis\_lespedezae* |
| *Ascomycota* | *Dothideomycetes* | *Botryosphaeriales* | *Botryosphaeriaceae* | *Neofusicoccum* |  |
| *Ascomycota* | *Sordariomycetes* | *Phyllachorales* | *Phyllachoraceae* | *Phyllachora* | *Phyllachora\_phyllostachydis* |
| *Ascomycota* | *Sordariomycetes* | *Hypocreomycetidae\_ord\_Incertae\_sedis* | *Plectosphaerellaceae* | *Verticillium* | *Verticillium\_insectorum* |
| *Ascomycota* | *Leotiomycetes* | *Rhytismatales* | *Rhytismataceae* | *Lophodermium* | *Lophodermium\_minus* |
| *Ascomycota* | *Sordariomycetes* | *Hypocreomycetidae\_ord\_Incertae\_sedis* | *Plectosphaerellaceae* | *Plectosphaerella* |  |
| *Ascomycota* | *Sordariomycetes* | *Hypocreales* | *Nectriaceae* | *Volutella* | *Volutella\_sp* |
| *Ascomycota* | *Leotiomycetes* | *Helotiales* | *Sclerotiniaceae* | *Sclerotinia* |  |
| *Ascomycota* | *Sordariomycetes* | *Hypocreales* | *Nectriaceae* | *Calonectria* | *Calonectria\_hongkongensis* |
| *Ascomycota* | *Dothideomycetes* | *Pleosporales* | *Pleosporaceae* | *Curvularia* | *Curvularia\_alcornii* |
| *Ascomycota* | *Dothideomycetes* | *Pleosporales* | *Pleosporaceae* | *Dendryphion* | *Dendryphion\_europaeum* |
| *Ascomycota* | *Sordariomycetes* | *Hypocreales* | *Nectriaceae* | *Calonectria* |  |

Table S2. Continued

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| phylum | class | order | family | genus | species |
| *Ascomycota* | *Dothideomycetes* | *Capnodiales* | *Teratosphaeriaceae* | *Hortaea* | *Hortaea\_acidophila* |
| *Ascomycota* | *Sordariomycetes* | *Hypocreales* | *Nectriaceae* | *Cylindrocladiella* |  |
| *Ascomycota* | *Sordariomycetes* | *Magnaporthales* | *Magnaporthaceae* | *Nakataea* | *Nakataea\_fusispora* |
| *Ascomycota* | *Sordariomycetes* | *Hypocreales* | *Nectriaceae* | *Calonectria* | *Calonectria\_hongkongensis* |
| *Ascomycota* | *Dothideomycetes* | *Capnodiales* | *Mycosphaerellaceae* | *Pseudocercospora* |  |
| *Ascomycota* | *Eurotiomycetes* | *Chaetothyriales* | *Chaetothyriales\_fam\_Incertae\_sedis* | *Strelitziana* |  |
| *Ascomycota* | *Sordariomycetes* | *Hypocreales* | *Nectriaceae* | *Volutella* | *Volutella\_sp* |
| *Ascomycota* | *Dothideomycetes* | *Botryosphaeriales* | *Botryosphaeriaceae* | *Microdiplodia* | *Microdiplodia\_miyakei* |
| *Ascomycota* | *Dothideomycetes* | *Pleosporales* | *Pleosporaceae* | *Curvularia* |  |
| *Ascomycota* | *Sordariomycetes* | *Hypocreomycetidae\_ord\_Incertae\_sedis* | *Plectosphaerellaceae* | *Plectosphaerella* | *Plectosphaerella\_oligotrophica* |
| *Ascomycota* | *Pezizomycotina\_cls\_Incertae\_sedis* | *Pezizomycotina\_ord\_Incertae\_sedis* | *Pezizomycotina\_fam\_Incertae\_sedis* | *Veronaea* | *Veronaea\_compacta* |
| *Ascomycota* | *Dothideomycetes* | *Capnodiales* | *Teratosphaeriaceae* | *Devriesia* | *Devriesia\_strelitziicola* |
| *Ascomycota* | *Sordariomycetes* | *Magnaporthales* | *Magnaporthaceae* | *Mycoleptodiscus* | *Mycoleptodiscus\_terrestris* |
| *Ascomycota* | *Dothideomycetes* | *Capnodiales* | *Teratosphaeriaceae* | *Devriesia* | *Devriesia\_sp* |
| *Ascomycota* | *Dothideomycetes* | *Pleosporales* | *Pleosporaceae* | *Edenia* | *Edenia\_gomezpompae* |
| *Ascomycota* | *Dothideomycetes* | *Capnodiales* | *Mycosphaerellaceae* | *Ramichloridium* | *Ramichloridium\_strelitziae* |
| *Ascomycota* | *Eurotiomycetes* | *Chaetothyriales* | *Chaetothyriales\_fam\_Incertae\_sedis* | *Strelitziana* | *Strelitziana\_mali* |
| *Ascomycota* | *Dothideomycetes* | *Venturiales* | *Venturiaceae* | *Cylindrosympodium* | *Cylindrosympodium\_sp* |
| *Ascomycota* | *Sordariomycetes* | *Hypocreales* | *Bionectriaceae* | *Clonostachys* |  |
| *Ascomycota* | *Sordariomycetes* | *Xylariales* | *Amphisphaeriaceae* | *Seiridium* |  |
| *Ascomycota* | *Dothideomycetes* | *Capnodiales* | *Teratosphaeriaceae* | *Catenulostroma* |  |

Table S2. Continued

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| phylum | class | order | family | genus | species |
| *Ascomycota* | *Dothideomycetes* | *Capnodiales* | *Teratosphaeriaceae* | *Hortaea* | *Hortaea\_werneckii* |
| *Ascomycota* | *Sordariomycetes* | *Magnaporthales* | *Magnaporthaceae* | *Mycoleptodiscus* | *Mycoleptodiscus\_sp* |
| *Ascomycota* | *Pezizomycotina\_cls\_Incertae\_sedis* | *Pezizomycotina\_ord\_Incertae\_sedis* | *Pezizomycotina\_fam\_Incertae\_sedis* | *Veronaea* |  |
| *Ascomycota* | *Sordariomycetes* | *Hypocreomycetidae\_ord\_Incertae\_sedis* | *Plectosphaerellaceae* | *Verticillium* | *Verticillium\_leptobactrum* |
| *Ascomycota* | *Dothideomycetes* | *Botryosphaeriales* | *Botryosphaeriaceae* | *Lasiodiplodia* |  |
| *Ascomycota* | *Sordariomycetes* | *Xylariales* | *Diatrypaceae* | *Eutypella* |  |
| *Ascomycota* | *Sordariomycetes* | *Magnaporthales* | *Magnaporthaceae* | *Mycoleptodiscus* | *Mycoleptodiscus\_sp* |
| *Ascomycota* | *Sordariomycetes* | *Hypocreales* | *Bionectriaceae* | *Clonostachys* | *Clonostachys\_phyllophila* |
| *Ascomycota* | *Dothideomycetes* | *Capnodiales* | *Mycosphaerellaceae* | *Ramichloridium* | *Ramichloridium\_strelitziae* |
| *Ascomycota* | *Dothideomycetes* | *Capnodiales* | *Teratosphaeriaceae* | *Devriesia* | *Devriesia\_sp* |
| *Ascomycota* | *Leotiomycetes* | *Rhytismatales* | *Rhytismataceae* | *Coccomyces* |  |
| *Ascomycota* | *Leotiomycetes* | *Rhytismatales* | *Rhytismataceae* | *Coccomyces* |  |
| *Ascomycota* | *Dothideomycetes* | *Capnodiales* | *Teratosphaeriaceae* | *Devriesia* | *Devriesia\_sp* |
| *Ascomycota* | *Dothideomycetes* | *Capnodiales* | *Teratosphaeriaceae* | *Devriesia* |  |
| *Ascomycota* | *Sordariomycetes* | *Hypocreomycetidae\_ord\_Incertae\_sedis* | *Plectosphaerellaceae* | *Verticillium* | *Verticillium\_insectorum* |
| *Ascomycota* | *Leotiomycetes* | *Rhytismatales* | *Rhytismataceae* | *Coccomyces* |  |
| *Ascomycota* | *Sordariomycetes* | *Ophiostomatales* | *Ophiostomataceae* | *Ophiostoma* | *Ophiostoma\_eucalyptigena* |
| *Ascomycota* | *Sordariomycetes* | *Hypocreales* | *Bionectriaceae* | *Clonostachys* | *Clonostachys\_phyllophila* |
| *Ascomycota* | *Sordariomycetes* | *Hypocreales* | *Nectriaceae* | *Calonectria* |  |
| *Ascomycota* | *Dothideomycetes* | *Capnodiales* | *Teratosphaeriaceae* | *Devriesia* |  |
| *Basidiomycota* | *Agaricomycetes* | *Polyporales* | *Ganodermataceae* | *Amauroderma* | *Amauroderma\_rugosum* |

Table S2. Continued

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| phylum | class | order | family | genus | species |
| *Ascomycota* | *Sordariomycetes* | *Hypocreales* | *Nectriaceae* | *Calonectria* | *Calonectria\_eucalypti* |
| *Ascomycota* | *Leotiomycetes* | *Rhytismatales* | *Rhytismataceae* | *Lophodermium* |  |
| *Ascomycota* | *Sordariomycetes* | *Hypocreales* | *Nectriaceae* | *Calonectria* |  |
| *Ascomycota* | *Sordariomycetes* | *Hypocreales* | *Nectriaceae* | *Volutella* |  |
| *Ascomycota* | *Sordariomycetes* | *Xylariales* | *Amphisphaeriaceae* | *Phlogicylindrium* | *Phlogicylindrium\_sp* |
| *Ascomycota* | *Dothideomycetes* | *Capnodiales* | *Mycosphaerellaceae* | *Cercospora* |  |
| *Ascomycota* | *Sordariomycetes* | *Hypocreales* | *Nectriaceae* | *Volutella* | *Volutella\_sp* |
| *Ascomycota* | *Leotiomycetes* | *Rhytismatales* | *Rhytismataceae* | *Lophodermium* | *Lophodermium\_minus* |
| *Ascomycota* | *Sordariomycetes* | *Hypocreomycetidae\_ord\_Incertae\_sedis* | *Plectosphaerellaceae* | *Verticillium* | *Verticillium\_insectorum* |
| *Chytridiomycota* | *Chytridiomycetes* | *Rhizophydiales* | *Rhizophydiaceae* | *Rhizophydium* | *Rhizophydium\_sphaerotheca* |
| *Ascomycota* | *Sordariomycetes* | *Hypocreales* | *Nectriaceae* | *Calonectria* | *Calonectria\_hongkongensis* |
| *Ascomycota* | *Sordariomycetes* | *Xylariales* | *Amphisphaeriaceae* | *Pestalotiopsis* |  |
| *Ascomycota* | *Sordariomycetes* | *Hypocreales* | *Nectriaceae* | *Calonectria* |  |
| *Ascomycota* | *Leotiomycetes* | *Rhytismatales* | *Rhytismataceae* | *Lophodermium* |  |
| *Ascomycota* | *Sordariomycetes* | *Xylariales* | *Diatrypaceae* | *Peroneutypa* | *Peroneutypa\_scoparia* |
| *Ascomycota* | *Sordariomycetes* | *Xylariales* | *Amphisphaeriaceae* | *Pestalotiopsis* |  |
| *Ascomycota* | *Sordariomycetes* | *Hypocreales* | *Nectriaceae* | *Volutella* | *Volutella\_ciliata* |
| *Ascomycota* | *Dothideomycetes* | *Capnodiales* | *Mycosphaerellaceae* | *Pseudocercosporella* | *Pseudocercosporella\_fraxini* |
| *Ascomycota* | *Dothideomycetes* | *Venturiales* | *Venturiaceae* | *Fusicladium* |  |
| *Ascomycota* | *Sordariomycetes* | *Hypocreales* | *Nectriaceae* | *Calonectria* |  |
| *Basidiomycota* | *Agaricomycetes* | *Cantharellales* | *Ceratobasidiaceae* | *Thanatephorus* | *Thanatephorus\_sp* |

Table S2. Continued

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| phylum | class | order | family | genus | species |
| *Ascomycota* | *Pezizomycotina\_cls\_Incertae\_sedis* | *Pezizomycotina\_ord\_Incertae\_sedis* | *Pezizomycotina\_fam\_Incertae\_sedis* | *Polyscytalum* | *Polyscytalum\_sp* |
| *Ascomycota* | *Sordariomycetes* | *Magnaporthales* | *Magnaporthaceae* | *Mycoleptodiscus* |  |
| *Ascomycota* | *Dothideomycetes* | *Capnodiales* | *Teratosphaeriaceae* | *Devriesia* | *Devriesia\_strelitziicola* |
| *Ascomycota* | *Sordariomycetes* | *Hypocreomycetidae\_ord\_Incertae\_sedis* | *Plectosphaerellaceae* | *Verticillium* | *Verticillium\_insectorum* |
| *Ascomycota* | *Sordariomycetes* | *Diaporthales* | *Schizoparmaceae* | *Pilidiella* | *Pilidiella\_sp* |
| *Ascomycota* | *Sordariomycetes* | *Hypocreomycetidae\_ord\_Incertae\_sedis* | *Plectosphaerellaceae* | *Plectosphaerella* |  |
| *Ascomycota* | *Sordariomycetes* | *Hypocreales* | *Nectriaceae* | *Calonectria* | *Calonectria\_hongkongensis* |
| *Ascomycota* | *Dothideomycetes* | *Capnodiales* | *Teratosphaeriaceae* | *Devriesia* | *Devriesia\_sp* |
| *Ascomycota* | *Dothideomycetes* | *Botryosphaeriales* | *Aplosporellaceae* | *Aplosporella* |  |
| *Ascomycota* | *Leotiomycetes* | *Rhytismatales* | *Rhytismataceae* | *Coccomyces* | *Coccomyces\_sp* |
| *Ascomycota* | *Dothideomycetes* | *Capnodiales* | *Mycosphaerellaceae* | *Pseudocercosporella* | *Pseudocercosporella\_fraxini* |
| *Ascomycota* | *Sordariomycetes* | *Magnaporthales* | *Magnaporthaceae* | *Mycoleptodiscus* |  |
| *Ascomycota* | *Dothideomycetes* | *Venturiales* | *Venturiaceae* | *Cylindrosympodium* | *Cylindrosympodium\_sp* |
| *Ascomycota* | *Dothideomycetes* | *Pleosporales* | *Pleosporaceae* | *Bipolaris* | *Bipolaris\_papendorfii* |
| *Ascomycota* | *Sordariomycetes* | *Magnaporthales* | *Magnaporthaceae* | *Mycoleptodiscus* | *Mycoleptodiscus\_sp* |
| *Ascomycota* | *Dothideomycetes* | *Capnodiales* | *Teratosphaeriaceae* | *Devriesia* |  |
| *Ascomycota* | *Dothideomycetes* | *Botryosphaeriales* | *Botryosphaeriaceae* | *Lasiodiplodia* |  |
| *Ascomycota* | *Dothideomycetes* | *Botryosphaeriales* | *Botryosphaeriaceae* | *Neofusicoccum* |  |
| *Ascomycota* | *Sordariomycetes* | *Hypocreomycetidae\_ord\_Incertae\_sedis* | *Plectosphaerellaceae* | *Plectosphaerella* |  |
| *Ascomycota* | *Dothideomycetes* | *Capnodiales* | *Teratosphaeriaceae* | *Devriesia* | *Devriesia\_sp* |
| *Ascomycota* | *Dothideomycetes* | *Dothideomycetes\_ord\_Incertae\_sedis* | *Dothideomycetes\_fam\_Incertae\_sedis* | *Asteromella* | *Asteromella\_sp* |

Table S2. Continued

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| phylum | class | order | family | genus | species |
| *Ascomycota* | *Sordariomycetes* | *Hypocreales* | *Nectriaceae* | *Calonectria* |  |
| *Ascomycota* | *Leotiomycetes* | *Helotiales* | *Helotiales\_fam\_Incertae\_sedis* | *Pilidium* |  |
| *Ascomycota* | *Dothideomycetes* | *Botryosphaeriales* | *Botryosphaeriaceae* | *Endomelanconiopsis* | *Endomelanconiopsis\_sp* |
| *Ascomycota* | *Eurotiomycetes* | *Chaetothyriales* | *Chaetothyriales\_fam\_Incertae\_sedis* | *Strelitziana* |  |
| *Ascomycota* | *Sordariomycetes* | *Magnaporthales* | *Magnaporthaceae* | *Mycoleptodiscus* | *Mycoleptodiscus\_sp* |
| *Ascomycota* | *Dothideomycetes* | *Capnodiales* | *Teratosphaeriaceae* | *Catenulostroma* |  |
| *Ascomycota* | *Sordariomycetes* | *Hypocreales* | *Nectriaceae* | *Calonectria* | *Calonectria\_penicilloides* |
| *Ascomycota* | *Sordariomycetes* | *Hypocreomycetidae\_ord\_Incertae\_sedis* | *Plectosphaerellaceae* | *Plectosphaerella* |  |
| *Ascomycota* | *Sordariomycetes* | *Magnaporthales* | *Magnaporthaceae* | *Mycoleptodiscus* | *Mycoleptodiscus\_sp* |
| *Ascomycota* | *Sordariomycetes* | *Hypocreales* | *Nectriaceae* | *Volutella* | *Volutella\_consors* |
| *Ascomycota* | *Dothideomycetes* | *Capnodiales* | *Teratosphaeriaceae* | *Devriesia* | *Devriesia\_sp* |
| *Ascomycota* | *Sordariomycetes* | *Magnaporthales* | *Magnaporthaceae* | *Mycoleptodiscus* | *Mycoleptodiscus\_sp* |
| *Ascomycota* | *Sordariomycetes* | *Magnaporthales* | *Magnaporthaceae* | *Mycoleptodiscus* | *Mycoleptodiscus\_sp* |
| *Ascomycota* | *Sordariomycetes* | *Hypocreales* | *Bionectriaceae* | *Clonostachys* |  |
| *Ascomycota* | *Dothideomycetes* | *Capnodiales* | *Teratosphaeriaceae* | *Devriesia* | *Devriesia\_sp* |
| *Ascomycota* | *Leotiomycetes* | *Rhytismatales* | *Rhytismataceae* | *Coccomyces* |  |
| *Ascomycota* | *Sordariomycetes* | *Magnaporthales* | *Magnaporthaceae* | *Mycoleptodiscus* | *Mycoleptodiscus\_sp* |
| *Ascomycota* | *Sordariomycetes* | *Hypocreales* | *Nectriaceae* | *Calonectria* |  |
| *Ascomycota* | *Sordariomycetes* | *Hypocreales* | *Nectriaceae* | *Calonectria* |  |
| *Ascomycota* | *Sordariomycetes* | *Xylariales* | *Amphisphaeriaceae* | *Pestalotiopsis* |  |
| *Ascomycota* | *Dothideomycetes* | *Capnodiales* | *Mycosphaerellaceae* | *Pseudocercospora* |  |

Table S2. Continued

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| phylum | class | order | family | genus | species |
| *Ascomycota* | *Dothideomycetes* | *Capnodiales* | *Teratosphaeriaceae* | *Devriesia* | *Devriesia\_strelitziicola* |
| *Ascomycota* | *Sordariomycetes* | *Hypocreales* | *Nectriaceae* | *Volutella* |  |
| *Ascomycota* | *Dothideomycetes* | *Capnodiales* | *Teratosphaeriaceae* | *Catenulostroma* |  |
| *Ascomycota* | *Leotiomycetes* | *Helotiales* | *Dermateaceae* | *Neofabraea* | *Neofabraea\_sp* |
| *Ascomycota* | *Sordariomycetes* | *Hypocreales* | *Nectriaceae* | *Calonectria* |  |
| *Ascomycota* | *Sordariomycetes* | *Hypocreales* | *Nectriaceae* | *Calonectria* |  |
| *Ascomycota* | *Sordariomycetes* | *Hypocreales* | *Nectriaceae* | *Volutella* | *Volutella\_consors* |
| *Ascomycota* | *Sordariomycetes* | *Hypocreales* | *Nectriaceae* | *Calonectria* |  |
| *Ascomycota* | *Leotiomycetes* | *Rhytismatales* | *Rhytismataceae* | *Lophodermium* |  |
| *Ascomycota* | *Dothideomycetes* | *Botryosphaeriales* | *Botryosphaeriaceae* | *Neofusicoccum* |  |

**Table S3.** Relating various diversity indexes of the total pathogen community to plant species abundance and phylogenetic distinctiveness. Bold numbers indicate significant correlations.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Index | Dataset | Abundance | | Phylogenetic distinctiveness | |
| standardized effect size | *P* value | standardized effect size | *P* value |
| Shannon | All | **0.24** | **0.00** | **-0.17** | **0.01** |
| Saplings | **0.30** | **0.01** | **-0.14** | **0.00** |
| Juveniles | **0.22** | **0.00** | **-0.11** | **0.00** |
| Adults | **0.13** | **0.00** | 0.04 | 0.35 |
| Simpson | All | **0.19** | **0.00** | **-0.23** | **0.00** |
| Saplings | **0.22** | **0.00** | **-0.22** | **0.01** |
| Juveniles | **0.16** | **0.02** | **-0.15** | **0.00** |
| Adults | **0.08** | **0.00** | -0.13 | 0.63 |

**Table S4.** Relating pathogen richness to plant species abundance when only considering plant species with 10-15 sampled individuals. Bold numbers indicate significant correlations.

|  |  |  |  |
| --- | --- | --- | --- |
| Pathogen richness | Dataset | Standardized effect size | *P* value |
| Specialists | All | -0.04 | 0.83 |
| Saplings | 0.02 | 0.32 |
| Juveniles | 0.1 | 0.46 |
| Adults | -0.01 | 0.33 |
| Total pathogen community | All | **0.28** | **0.00** |
| Saplings | **0.22** | **0.00** |
| Juveniles | **0.18** | **0.00** |
| Adults | **0.10** | **0.00** |

**Table S5.** Relating pathogen richness to plant species phylogenetic distinctiveness when only considering plant species with 10-15 sampled individuals. Bold numbers indicate significant correlations.

|  |  |  |  |
| --- | --- | --- | --- |
| Pathogen richness | Dataset | Standardized effect size | *P* value |
| Phylogenetic specialists | All | **-0.14** | **0.02** |
| Saplings | **-0.18** | **0.00** |
| Juveniles | **-0.08** | **0.00** |
| Adults | -0.12 | 0.13 |
| Total pathogen community | All | **-0.24** | **0.00** |
| Saplings | **-0.33** | **0.00** |
| Juveniles | **-0.15** | **0.00** |
| Adults | -0.09 | 0.25 |

**Table S6.** Relating pathogen richness to plant species abundance when only considering pathogenic OTUs that occurred in more than 25% or 60% of the total samples for each plant species. Bold numbers indicate significant correlations.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Threshold | Pathogen richness | Dataset | Standardized effect size | *P* value |
| 25% | Specialists | All | -0.13 | 0.12 |
| Saplings | -0.22 | 0.22 |
| Juveniles | 0.18 | 0.17 |
| Adults | 0.13 | 0.47 |
| Total pathogen community | All | **0.34** | **0.00** |
| Saplings | **0.31** | **0.00** |
| Juveniles | **0.14** | **0.00** |
| Adults | 0.06 | 0.28 |
| 60% | Specialists | All | 0.02 | 0.11 |
| Saplings | 0.11 | 0.13 |
| Juveniles | -0.14 | 0.32 |
| Adults | 0.10 | 0.21 |
| Total pathogen community | All | **0.27** | **0.03** |
| Saplings | **0.30** | **0.02** |
| Juveniles | **0.22** | **0.00** |
| Adults | **0.13** | **0.00** |

**Table S7.** Relating pathogen richness to plant species phylogenetic distinctiveness when only considering pathogenic OTUs that occurred in more than 25% or 60% of the total samples for each plant species. Bold numbers indicate significant correlations.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Threshold | Pathogen richness | Dataset | Standardized effect size | *P* value |
| 25% | Phylogenetic specialists | All | **-0.23** | **0.00** |
| Saplings | **-0.20** | **0.02** |
| Juveniles | -0.03 | 0.18 |
| Adults | -0.17 | 0.42 |
| Total pathogen community | All | **-0.17** | **0.00** |
| Saplings | **-0.21** | **0.00** |
| Juveniles | **-0.11** | **0.00** |
| Adults | -0.14 | 0.15 |
| 60% | Phylogenetic specialists | All | **-0.32** | **0.00** |
| Saplings | **-0.28** | **0.00** |
| Juveniles | **-0.06** | **0.00** |
| Adults | 0.15 | 0.18 |
| Total pathogen community | All | **-0.21** | **0.00** |
| Saplings | **-0.25** | **0.00** |
| Juveniles | 0.17 | 0.46 |
| Adults | -0.05 | 0.37 |