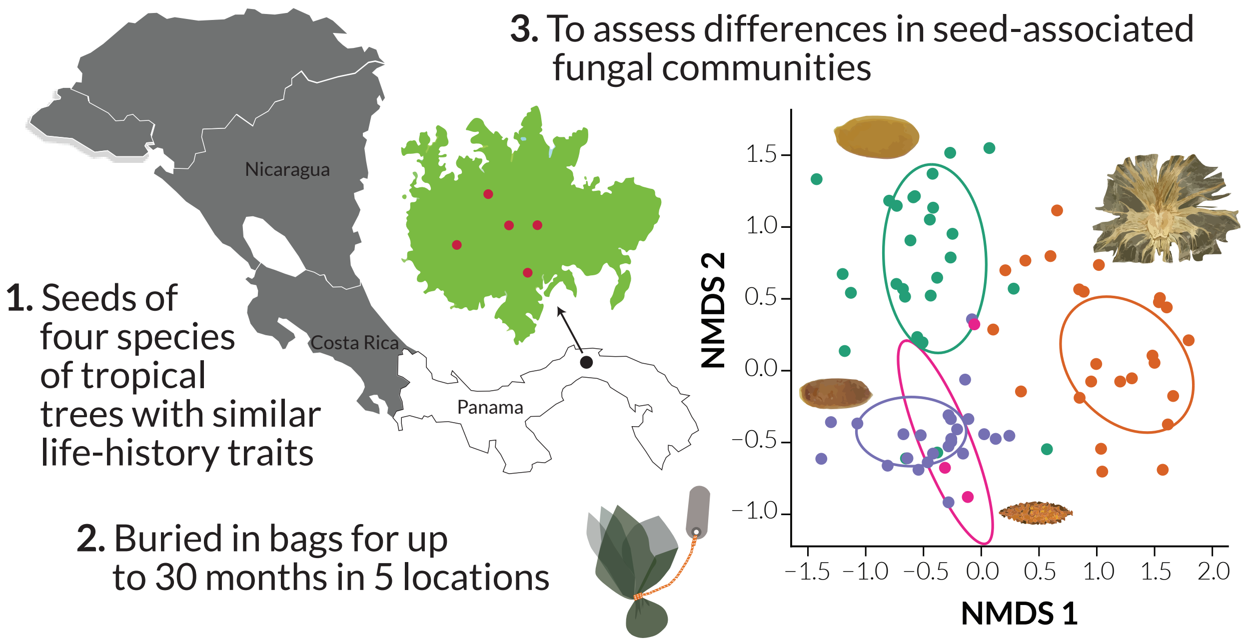
Closely related tree species support distinct communities of seed-associated fungi in a lowland tropical forest

Graphical Abstract



Title: Closely related tree species support distinct communities of seed-associated fungi in a lowland tropical forest

Authors:
Paul-Camilo Zalamea[1,2*], Carolina Sarmiento[1,2], A. Elizabeth Arnold[3,4], Adam S. Davis[5], Astrid Ferrer[6], James W. Dalling[2,6].

[1] Department of Integrative Biology, University of South Florida, Tampa, FL, USA
[2] Smithsonian Tropical Research Institute, Panama City, Republic of Panama
[3]School of Plant Sciences, The University of Arizona, Tucson, AZ, USA
[4]Department of Ecology and Evolutionary Biology, The University of Arizona, Tucson, AZ, USA
[5] Department of Crop Sciences, University of Illinois, Urbana, IL, USA
[6]Department of Plant Biology, University of Illinois, Urbana, IL, USA

*Correspondence: Paul-Camilo Zalamea
e-mail: paulcamiloz@usf.edu or camilozalamea@gmail.com

Running title: Seed-fungal associations, seed persistence, and germination.

Word count: Abstract 339

Abstract.

1. Previous theoretical work has highlighted the potential for natural enemies to mediate the coexistence of species with similar life-histories via density-dependent effects on survivorship. For plant pathogens to play this role, they must differ in their ability to infect or induce disease in different host plant species. In tropical forests characterized by high diversity, these effects must extend to phylogenetically closely related species pairs. Mortality at the seed and seedling stage strongly influences the abundance and distribution of tropical tree species, but the host preferences and spatial distributions of fungi are rarely determined.
2. We examined how host species identity, relatedness, and seed viability influence the composition of fungal communities associated with seeds of four co-occurring pioneer trees (*Cecropia insignis*, *C. longipes*, *C. peltata*, and *Jacaranda copaia*). Seeds were buried in mesh bags in five common gardens in the understory of a lowland tropical forest in Panama and retrieved at intervals from 1-30 months. A subset of the seeds in each bag was used to determine germination success. One half of each remaining seed was tested for viability; the other half was used to culture and identify seed-infecting fungi.
3. Seeds were infected by fungi after burial. Although fungal communities differed in viable vs. dead seeds, and across burial locations, community composition primarily varied as a function of plant species identity (30.7% of variation in community composition vs. 4.5% for viability and location together), even for congeneric *Cecropia* species. Phylogenetic reconstruction showed that relatedness of fungi mostly reflected differences between *Jacaranda* (Bignoniaceae) and *Cecropia* (Urticaceae).

4. Although the proportion of germinable seeds decreased gradually over time for all species, intraspecific variation in survival was high at the same location (e.g., ranging from 0-100% for *C. peltata*) suggesting variable exposure or susceptibility to seed pathogens.
5. *Synthesis:* Our study provides evidence under field conditions that congeneric tree species with similar life-history differ markedly in seed-associated fungal communities when exposed to the same soilborne fungi. This is a critical first step supporting pathogen mediated coexistence of closely related tree species.

Keywords: Cecropia; *Jacaranda*; lowland tropical forests; pioneer trees; plant-pathogen interactions; seed-associated fungi; seed pathogens; seed persistence; soil seed bank.

Introduction

Pathogens are hypothesised to play a fundamental role in regulating the diversity and distribution of plant species in tropical forests (Mangan *et al.* 2010; Bagchi *et al.* 2014). These community-level effects arise from density-dependent regulation of populations of individual host species, facilitating recruitment of locally less abundant, heterospecific taxa (Fine, Mesones, & Coley 2004; Bagchi *et al.* 2014; Comita *et al.* 2014). Empirical support for this hypothesis comes from diverse studies, including experiments that compare seed and seedling survival in forest soil with and without fungicide treatments. These studies strongly suggest that pathogens increase mortality rates for species that occur at high densities, thus increasing species diversity (Dalling, Swaine, & Garwood 1998; Bell, Freckleton, & Lewis 2006; Bagchi *et al.* 2014). In general, experimental studies that manipulate pathogen pressure are consistent with the role of pathogens in mediating coexistence in species-rich plant communities, but they often focus on species representing different genera, with distinctive life-history and functional traits (e.g., Bagchi *et al.* 2014). An underlying tenet of the hypothesis – that even closely related host species will differ in their susceptibility to infection from the same pathogen source – has not been tested previously.

Seed mortality due to fungal infection varies widely within plant communities (Blaney & Kotanen 2001; Gallery, Moore, & Dalling 2010), with susceptibility to pathogens varying among species (see Augspurger & Wilkinson, 2007; Mommer *et al.* 2018). Despite the importance of pathogenic fungi as primary agents of mortality, our understanding of the spatial distribution, host range, and impact of fungi on tropical forest species remains limited. One possible explanation for this knowledge gap is the difficulty in developing experimental systems that are amenable to characterizing pathogen communities across spatial scales and host ranges. Seed-infecting fungal communities can provide a model system due to their manageable diversity, the ease of manipulation and replication of seed studies (Sarmiento *et al.* 2017), and because fungi play a preeminent role in seed survival in tropical forests, especially for species that form persistent soil seed banks (Dalling *et al.* 1998; Gallery *et al.* 2010).

The soil seed bank represents a key life-history stage for tropical pioneer species, equivalent to the seedling stage for shade-tolerant species. Unlike the seeds of shade tolerant species that typically germinate within weeks of dispersal, seeds of pioneers can survive in the soil seed bank for years to decades until a canopy gap creates favourable conditions for germination (Dalling & Brown 2009). Seeds persist in a dormant state, or – in some species – remain in a quiescent state, wherein seeds lack any intrinsic barrier to germination (Thompson 2000). Zalamea *et al.* (2018)

showed that quiescent seeds lack many of the chemical and physical defences that characterize dormant seeds. Such weak defences leave quiescent seeds susceptible to microbial infection before germination occurs (Gallery *et al.* 2010), and in general are associated with seed persistence times that are shorter than those of dormant seeds (Zalamea *et al.* 2018). However, our understanding of how quiescent seeds interact with soil-borne microbes is limited.

Using a phylogenetically diverse group of common pioneer tree species from lowland tropical forests in Panama (nine species from six families), Sarmiento *et al.* (2017) found that the composition of fungal communities that infect seeds buried in the soil for up to 12 months is strongly determined by plant species rather than by soil type, forest characteristics, or duration of burial. This suggests a high degree of compositional dissimilarity of seed infecting fungal communities across taxa at the family and higher taxonomic levels. However, if the pathogen-mediated coexistence hypothesis is to provide a general mechanism for the maintenance of diversity then it needs to account for the co-occurrence of species-rich genera that are a product of recent divergence, and where traits that influence susceptibility to natural enemies are likely to show strong phylogenetic signal (Queenborough *et al.* 2009). A previous study of foliar pathogens has indeed shown that closely related taxa are more likely to be susceptible to attack by the same pathogens (Gilbert & Webb 2007).

Here we report the structure and phylogenetic relationships of seed-associated fungal communities of three *Cecropia* species (Urticaceae), and a more distantly related, co-occurring species *Jacaranda copaia* (Bignoniaceae). These four species lack seed dormancy. In the lowland tropical forest of Barro Colorado Island (BCI), Panama, two species are locally common (*C. insignis* and *J. copaia*) and the other two (*C. longipes* and *C. peltata*) are locally rare. The majority of fungi that infect seeds in this forest are acquired directly from soil (Sarmiento *et al.* 2017). We placed seeds of these species into common gardens in the forest understory at BCI that together spanned multiple soil types and forest ages. We measured seed germination (equivalent to seed survival) for seeds buried for up to 30 months, and cultured and identified fungi from the interior of surface-sterilized seeds to assess the importance of host species, burial location, and time-course of infection in shaping the communities of fungi that naturally colonized seeds in the soil. By combining information on fungal infection with data on seed germination we explore how fungi were associated with seed survival.

In this context we tested five main predictions. First, we predicted that seed infection rates would increase through the 30-month time course of our experiment, consistent with fungi encountering and colonizing seed interiors over time. Second, we anticipated that seed infection rates would be higher on dead seeds than live seeds given the potential for soil saprotrophs to colonize decaying material. Third, we predicted that locally abundant tree species would harbour a greater diversity of seed-associated fungi than rare species, as the proximity or higher regional density of conspecific individuals would increase dispersal among susceptible hosts, fostering populations of host-specialist fungi (as observed for wood decay fungi; Gilbert, Ferrer, & Carranza 2002). Fourth, we anticipated that congeneric *Cecropia* species with similar seed morphology and dispersal traits would harbour distinct fungal communities from one another, and that these communities would differ in community composition from those of a more distantly related species (*J. copaia*). Finally, we predicted that species with higher infection rates should have lower germination rates, consistent with the expectation that seed infecting fungi are primarily antagonistic.

Materials and methods.

Study site, species selection and common garden experiment

We carried out this study in a seasonally moist tropical forest at BCI, Panama (9°10'N, 79°51'W). Rainfall on BCI averages 2600 mm per year, with a pronounced dry season starting in late December or early January and continuing until late April (Windsor 1990).

We selected three (*Cecropia insignis* Liebm., *C. longipes* Pittier, *C. peltata* L.) of the four species of *Cecropia* Loefl. (Urticaceae, Rosales) that naturally occur on Barro Colorado Nature Monument (Croat 1978). *Cecropia* are dioecious canopy trees with animal-dispersed seeds (birds, bats, and primates) that recruit into gaps and other canopy openings from seed rain and the soil seed bank (Berg & Franco-Roselli 2005). The genus includes 61 species distributed across a wide range of climates from southern Mexico to northern Argentina (Berg & Franco-Roselli 2005). We also included *Jacaranda copaia* Aubl. (Bignoniaceae; Lamiales), a widely distributed pioneer tree in Central and South America with wind-dispersed seeds that is distantly related to *Cecropia* but that has similar regeneration requirements (Croat 1978).

Seeds of all species were collected from at least five different maternal sources in 2012-2014 in accordance with seasonal variation in fruiting phenology. Mature infructescences of *Cecropia* spp. were collected directly from trees or from freshly fallen material beneath their crowns. *Jacaranda copaia* trees can attain 35 m in height when mature, precluding collection of ripe fruits directly from the crown. For this species we used recently fallen seeds estimated to have been on the soil surface for a short time (from minutes to a few hours).

Seeds of *J. copaia* were separated from dehiscent woody seed pods and the wings were cut from each seed. Seeds of *Cecropia* (technically fruits; Lobova *et al.* 2003) were removed from whole infructescences. Immediately after collection seeds were cleaned with tap water and 0.7% sodium hypochlorite for 2 min to remove small pieces of pulp. Clean seeds of all species were air-dried at room temperature (~22°C) for several days under low red:far red irradiance.

We established five common garden plots (9 x 15 m each) in lowland forest at BCI. Common gardens were at least 350 m apart (average distance 800 m) and were located under closed-canopy forest to limit seed germination (see Table S1 for a summary of common garden characteristics; see also Zalamea *et al.* 2015, Ruzi *et al.* 2017, and Sarmiento *et al.* 2017). They were placed in multiple forest- and soil- types that varied in slope and aspect (Baillie *et al.* 2006). No adults of the study species occurred within 20 m of the garden edges.

Dry seeds from all maternal sources of each species were thoroughly mixed, pooled, and placed into seed bags. Each seed bag contained 45 seeds of one species mixed with 10 g of sterile forest soil (previously autoclaved at 121°C for 2 h). Each set of soil and seeds was enclosed in a nylon mesh bag (pore size = 0.2 mm) and covered with aluminium mesh (pore size = 2 mm) to exclude seed predators but not microorganisms.

Twenty-eight bags per plant species were distributed among four replicate subplots per garden, where they were buried 2 cm below the soil surface and 40 cm apart. A total of 140 seed bags and a total of 6300 seeds per species were included in the burial experiment. Seeds of each species were buried less than a month after seed collection, matching the natural phenology of fruit production and seed dispersal. We evaluated initial infection rates and confirmed the viability status of the seed lot before burial by processing 400 fresh seeds (i.e., seeds that were not buried) per species (200 seeds for germination; 200 seeds for fungal culture – see below for details).

Seed processing and retrieval after burial

Four seed bags for each species in each garden were collected at each of seven time points: 1, 3, 6, 12, 18, 24, and 30 months after burial. Seeds were retrieved by rinsing the contents of each bag with tap water over a sieve. Seeds were partitioned for tests of (i) germination (10 seeds per seed bag) and (ii) seed viability and identification of seed-associated fungi (10 seeds per seed bag). In general, seeds were recovered intact, precluding lethal germination as a source of seed mortality. In 2% of cases, we recovered fewer than 20 seeds per bag, suggesting that small invertebrate seed predators penetrated or chewed the nylon mesh. In these cases, the recovered seeds were partitioned evenly among germination and culturing approaches. We did not find 28 (i.e., 5%) of bags that were buried, likely reflecting displacement by small mammals or rain events.

To record the time series of seed germination for each species, 10 seeds from each seed bag were placed in a Petri dish lined with paper towel, moistened with sterile distilled water, and sealed with two layers of Parafilm® (Zalamea *et al.* 2015; 2018). Seeds were incubated in a shade house on BCI under ca. 30% sunlight, high red:far-red irradiance (ca. 1.4), and ambient temperature (23-30°C). Germination (i.e., radicle protrusion) was scored over six weeks. The maximum temperature recorded on the germination bench was ca. 38°C, similar to the temperature near the soil surface in large treefall gaps on BCI (Marthews *et al.* 2008).

Fungal isolation and seed viability assessment followed Sarmiento *et al*. (2017). Briefly, 10 intact seeds were haphazardly selected from each bag, surface-sterilized (95% ethanol, 10 sec; 0.7% NaClO, 2 min; 70% ethanol, 2 min), and allowed to surface-dry under sterile conditions. Surface-sterilizing the seeds allowed us to isolate fungi that had penetrated the seed coat while eliminating fungi that were restricted to the seed surface.

After surface-drying briefly, surface-sterilized seeds were cut in half under sterile conditions. Half of each seed was placed on 2% malt extract agar (MEA) in an individual 1.5 mL microcentrifuge tube for fungal isolation (see below). The other half was used to score seed viability (i.e., viable or inviable) via tetrazolium staining (TZ; 2, 3, 5-triphenyl tetrazolium chloride), such that both infection status and viability were scored for each seed. Prior to TZ staining, *Cecropia* seed halves were placed in a Petri dish lined with wet filter paper and incubated for 48 h in a shade house under ca. 30% sunlight at ambient temperature. After 48 h of incubation, seed halves were saturated with 0.5% TZ and kept in the dark at ca. 22°C for 24 h after which seed viability was scored using a stereomicroscope. Seed halves of *J. copaia* were saturated with 0.5% TZ immediately after cutting and kept in the dark at ca. 22°C for 24 h prior to scoring seed viability (Zalamea *et al.* 2018). Dishes were sealed with Parafilm® throughout incubation.

Vouchering and molecular analyses of fungi

Cultures were incubated at room temperature (ca. 22°C) with natural light-dark cycles for at least 12 months. If fungal growth was observed, we excised a small piece of fresh mycelium from each microcentrifuge tube under sterile conditions. The excised pieces were cut in half. One half was used for DNA extraction and Sanger sequencing (see below). The other half was plated in a 60 mm Petri dish with MEA to obtain a pure culture. Pure cultures of all fungi were vouchered in sterile water and deposited at the Robert L. Gilbertson Mycological Herbarium, University of Arizona (MYCO-ARIZ; Table S2).

Total genomic DNA was extracted from ground mycelium of each sample with the REDExtract-N-Amp Plant PCR kit (Sigma-Aldrich, Saint Louis, MO, USA). Primers ITS1F and LR3 were used to PCR-amplify a ca. 1000-1200 basepair (bp) fragment of nuclear ribosomal DNA from each extraction. Amplicons consisted of the nuclear internal transcribed spacers and 5.8S gene (ITS rDNA) and an adjacent portion (ca. 600 bp) of the large subunit (LSU rDNA). If amplification failed with these primers, PCR was repeated with primers ITS5 and LR3. PCR reaction mixture and cycling reactions followed Sarmiento *et al.* (2017). PCR products were verified by staining with SYBR Green I (Molecular Probes, Invitrogen, Carlsbad, CA, USA) followed by electrophoresis on a 1% agarose gel. All products that yielded single bands were cleaned using 1 μL of the USB ExoSAP-IT reagent (Affymetrix, Inc., Cleveland, OH, USA), quantified, normalized and sequenced bidirectionally at the University of Arizona Genetics Core with the original sequencing primers. We assembled contigs and verified base calls from chromatograms following Sarmiento *et al*. (2017).

Analyses of seed-associated fungal communities

Operational taxonomic units (OTUs) were defined by 97% similarity in the Sanger clustering workflow of the Mobyle SNAP Workbench (Monacell & Carbone 2014) based on previously published methods for clustering ITS-LSU rDNA sequence data (U'Ren *et al.* 2009; 2012). Results described below generally were consistent when analysed with more stringent OTU delimitation (e.g., at 99% similarity; data not shown). Diversity was measured as Fisher's alpha, which is robust to variation in sample size and is appropriate given the relative abundance of OTU (see Sarmiento *et al.* 2017). Isolation frequency was calculated as the number of isolates divided by the number of examined seeds.

We obtained 1322 sequences from 1594 cultures (83%; Table 1). Of these, 1264 sequenced isolates came from buried seeds and 58 came from fresh seeds (Table 1). Overall, 165 OTUs were defined at 97% of sequence similarity. All OTUs were included in measures of diversity. In most cases only one fungal OTU emerged from each infected seed in culture. Two OTUs were successfully sequenced from six seeds, and three OTUs were successfully sequenced from one seed.

Seed-associated fungal communities were defined as fungal isolates from seeds of a given plant species, burial duration, burial location, and viability classification. By definition, rare OTUs could not be present in all plant species or all communities; thus, we excluded OTUs that had fewer than four isolates and fungal communities with fewer than four isolates from analyses of community structure, with a resulting pool of 39 OTUs and 98 communities.

We used a multivariate GLM to test the extent to which each factor (i.e., plant species, burial duration, burial location, or seed viability) was relevant to fungal community structure. We used a negative-binomial GLM based on sequence count data and a binomial GLM based on presence–absence data, performed with the R package *mvabund* (Wang *et al.* 2012). We complemented the results from the multivariate GLM with non-metric multidimensional scaling (NMDS) analysis and variation-partitioning analyses that were performed with the R package *vegan* (Oksanen *et al.* 2016). The NMDS analysis was performed using the function *metaMDS* with the dissimilarity matrix calculated using the Morisita–Horn index and the parameter *k* set to three dimensions (for graphical representations we only included the first two dimensions). Variation-partitioning analyses were performed using the function *varpart*, with plant species, burial duration, burial location, and seed viability coded as explanatory factors.

Taxonomic placement and phylogenetic relationships of seed-associated fungi

We complemented OTU-level analyses of fungal communities with a phylogenetic approach that contextualized OTUs in an evolutionary framework and provided a basis for preliminary taxonomic identification. A kingdom level phylogenetic tree for fungi was constructed with scaffolding sequences downloaded from T-BAS v. 2.1 (Carbone *et al.* 2019), which included all major classes of Ascomycota (the most common phylum among seed-associated fungi; Sarmiento *et al.* 2017). We integrated one representative sequence for each OTU and aligned the resulting dataset in PASTA with the following settings: aligner (MAFFT), merger (OPAL), tree estimator (FastTree), model (GTR+G20), max.subproblem (default size), decomposition (centroid), and iteration limit (3) (Mirarab *et al.* 2015). The best alignment was again optimized by eye and manually corrected using Seaview (Version 4.6). Maximum Likelihood (ML) analyses were used to estimate phylogenetic relationships and were performed with RAxML-HPC2 on XSEDE (8.2.8) through the CIPRES Science Gateway v. 3.3 (http://www.phylo.org) with a GTRCAT approximation. Nodal support was determined by rapid bootstrapping (BS) with 1000 bootstrap iterations. Graphical representation was completed in EvolView (He *et al.* 2016). Taxonomic annotation of the sequences was based on NCBI BLASTN suite and the T-BAS v. 2.1 (Carbone *et al.* 2019) and are reported up to the genus level in the supplement (Table

S2) to avoid mistakenly assigning species names based on limited evidence (see the disclaimer at the T-BAS portal, indicating that the results are not to be used for species-level identification: https://vclv99-239.hpc.ncsu.edu/tbas2_1/pages/tbas.php). We chose not to categorize fungi into ecological modes (e.g., pathogens, saprotrophs) based on barcode sequences because in several groups represented here, barcode sequences can be the same for fungal isolates with positive, negative, or neutral impacts on seed germination (see Sarmiento *et al.* 2017, Shaffer *et al.* 2017), and many of our fungi represent novel genotypes not present yet in databases such as FunGUILD.

The diversity of OTUs detected here represent taxa with varying degrees of phylogenetic relatedness. We used the R package *ape* (Paradis & Schliep, 2019) to analyse fungal communities in a phylogenetic framework. We restricted the analyses to the Ascomycota, which comprised 88.5% of observed OTUs. We used the R package *pez* (Pearse *et al.* 2015) to estimate the Faith's diversity index (PD) for Ascomycota from each plant species, defined as the sum of branch lengths of the phylogeny connecting all species in the target community. We used the R packages *GUniFrac* (Chen *et al.* 2012) and *vegan* (Oksanen *et al.* 2016) to calculate phylogenetic beta-diversity between seed-associated fungal communities via the *adonis* function (PERMANOVA) based on the generalized Unifrac distance matrix with d = 0.5 and 1000 permutations.

Analyses of seed germination

We analysed the change in the proportion of seeds that survived (and therefore germinated) as a function of species, burial duration, and garden location, using generalized linear mixed-effects models. We used binomial error distributions to fit the models and coded replicate as a random effect. We used species, burial duration, and garden location as fixed effects. We used likelihood ratio tests based on χ^2 tests to compare models with and without species, burial duration and garden location as explanatory variables. Analyses were performed with the R package *nlme* (Pinheiro *et al.* 2020).

Although the gold standard for inferring impacts of fungi on seeds would be to perform inoculation experiments to satisfy Koch's postulates (e.g., Sarmiento *et al.* 2017), the 165 OTUs found here made that impractical. Therefore, we examined the relationship of particular fungal OTUs to seed germination. While not establishing causality with regard to the impacts of each strain on germination, these analyses provide data that can guide future inoculation trials. We used two approaches: generalized linear mixed-effects models and partial least squares regression (PLSR) models. We used generalized linear mixed-effects models for each of the species separately to characterize the time series in germination and included burial duration nested within burial location as a fixed effect. For each of the species, we then included the rate of seed viability loss (represented by the slope of the generalized linear mixed-effects models) for each of the burial locations as the dependent variable in the PLSR models where OTU abundance (number of isolates belonging to each OTU per burial location) was the independent variable. For this analysis we also excluded OTUs represented by fewer than four isolates. To perform the PLSR models we used the *plsr* function from the *pls* R package (Mevik, Wehrens, & Liland 2019). We used the 5th percentile of the PLSR loadings as the threshold to identify OTUs that had positive or negative associations with seed germination.

To explore the potential effect of OTUs identified by PLSR on germination of each species, we calculated the relative abundance of these fungal OTUs recovered from seed bags with low (<30%) and high (>70%) germination. If OTUs are important drivers of seed mortality (or seed survival) then we expected that the relative abundance of these OTUs in bags with high and low germination would differ from that expected by chance alone. The relative abundance of any given OTU was calculated as the observed abundance of OTUs coming from low and high germination bags respectively, minus the expected abundance (calculated as expected values in a χ^2 test) which predicts that any given OTU will be equally distributed in low- and high-germination bags.

Results

When adjusted for the number of seeds examined, detectable fungal infections were over twenty times more common in seeds that were buried than in fresh seeds of *Cecropia* species (Table 1), confirming that buried seeds were colonized naturally by soilborne fungi. Detectable fungal infections were similar in frequency for buried and fresh seeds of *J. copaia*, reflecting colonization of seeds in fruits retrieved from the forest floor prior to our experiment as well as colonization after burial (Table 1). Seed-associated fungal communities did not differ meaningfully between fresh and buried seeds of *J. copaia* (Fig. S1). This result suggests that colonization of fresh seeds occurred at the soil surface and lower variation among seed-associated fungal communities of fresh seeds reflects lower sampling or that pre-burial fungi are different from post-burial but were retained after burial.

In contrast to our first prediction, we did not find that infection frequencies of seeds increased over the time course of our experiment. After burial, detectable fungal infections in seeds differed in frequency among plant species (Table 1; generalized linear model (GLM): $df_{3,265}$, Dev = 2.81, P < 0.0001); decreased as a function of burial duration (Fig. 1; GLM: $df_{6,259}$, Dev = 4.62, P < 0.0001); and did not vary among burial locations or as a function of seed viability status (Fig. S2; GLM: location, $df_{4,255}$, Dev = 0.35, P = 0.071; viability, $df_{1,254}$, Dev = 0.001, P = 0.847; Table S3). These analyses also show that in contrast to our second prediction, dead seeds did not have higher infection frequencies than live seeds. While isolation frequency remained constant for *J. copaia*, it decreased over time for *C. peltata*, *C. longipes* and to a lesser extent for *C. insignis* (GLM: plant species × duration, $df_{18,236}$, Dev = 2.91, P < 0.0001; Fig. 1).

The diversity of fungi associated with fresh seeds was lower than the diversity of fungi associated with buried seeds (Table 1). The diversity of seed-associated fungi did not differ significantly among tree species ($df_{3,119}$, Dev = 137.7, P = 0.062), nor among burial locations ($df_{4,109}$, Dev = 138.1, P = 0.114) or burial durations ($df_{6,113}$, Dev = 88.4, P = 0.559); nor as a function of seed viability status (Fig. S3; $df_{1,108}$, Dev = 8.9, P = 0.483; Table S4). In contrast to our third prediction, we did not observe a higher diversity of seed-associated fungi in seeds of the more common tree species (Table 1; Fig. S3).

Consistent with our fourth prediction, seed-associated fungal communities differed among plant species (negative binomial GLM; $df_{3,94}$, Dev = 652.5, P < 0.001); among burial locations ($df_{4,84}$, Dev = 266.8, P < 0.001) and burial durations ($df_{6,88}$, Dev = 353.3, P < 0.001); and as a function of seed viability ($df_{1,83}$, Dev = 91, P < 0.001). Non-metric multidimensional scaling (NMDS) revealed the importance of plant species in defining fungal community composition, with additional but minor contributions from burial duration, burial location, and seed viability (Fig. 2a-d). Plant species alone explained 30.7% of the total variance in OTU abundance, while the other three variables together only explained 6.6% of the total variance (Fig. 2e).

Analyses of seed-associated fungal communities defined by presence-absence data showed similar results (Fig. S4a).

Pairwise comparisons showed that fungal community similarity was greater among conspecific seeds than heterospecific seeds (df_1, F = 3783.4, P < 0.001), seeds of the same genus than seeds of the other genus (df_1, F = 552.3, P < 0.001), seeds buried for the same duration than different durations (df_1, F = 46.9, P < 0.001), and between seeds of the same vs. different viability classes (df_1, F = 5.4, P = 0.02) (Fig. 2f). A dendrogram of Morisita–Horn similarities among fungal communities isolated from seeds of *Cecropia* and *Jacaranda* showed that communities isolated from *Cecropia* are more similar to each other than when compared to communities isolated from *Jacaranda* (Fig. S4b).

Phylogenetic structure and taxonomy of seed-associated fungi

As for the OTU-level analyses, phylogenetic community structure of fungi representing the Ascomycota differed among tree species (F = 8.64, R^2 = 0.02, P = 0.001), indicating that fungal communities from the same species of seeds were more closely related than expected by chance. This result was influenced by fungi isolated from *J. copaia*, for which we found that the standardized effect size of mean phylogenetic distance among OTUs was higher than the null expectation (MPD = 0.41, P = 0.001), in contrast to the other species (Table S5). The three species of *Cecropia* did not differ in terms of the phylogenetic community structure of fungi that colonized seeds (F = 0.69, R^2 = 0.001, P = 0.63). Faith's diversity index (PD) ranged from 3.1 in *C. insignis* to 4.7 in *J. copaia* (Table 1).

Fungi isolated from seeds represented a broad range of phylogenetic lineages (Fig. 3a). The most abundant classes of Ascomycota were Sordariomycetes (83.4% of isolates), Dothideomycetes (9.6%), and Eurotiomycetes (0.9%). Basidiomycota were isolated less frequently and were mainly represented by Agaricomycetes (4.6% of isolates; Fig. 3, Fig. S5, Table S2). The prevalence of taxonomic classes and orders differed across plant species (Fig. 3b and c). Hypocreales (50% of isolates) and Xylariales (15%) were the most abundant orders and *Trichoderma* (39%) and *Fusarium* (9%) were the most abundant genera.

Seed germination and seed-associated fungi

For all species, the proportion of seeds that germinated was strongly and positively correlated with seed viability (as determined via TZ staining). In all cases, slopes were close to 1, ranging from 0.85 for *C. insignis* to 1.05 for *C. peltata*. All correlations were highly significant ($P < 0.001$) and R^2 values ranged from 0.65 for *C. longipes* to 0.80 for *C. peltata*. Initial germinability of fresh seeds was higher than 50% for all species, varying from 51% in *C. longipes* to 81.5% in *C. peltata*.

In contrast to our prediction, seed viability was not negatively associated with seed infection frequency. After burial, the proportion of germinable seeds differed among species (df_3, $\chi^2 = 2205$, $P < 0.001$) and decreased gradually over time for all species (df_1, $\chi^2 = 7281$, $P < 0.001$; Fig. 4). For *C. insignis* germination ranged from 63% after one month to 15% after 30 months of burial (Fig. 4a). Similar results were found for *C. longipes* (Fig. 4b), *C. peltata* (Fig. 4c), and *J. copaia* (Fig. 4d). There was also a significant effect of common garden location on germination (df_4, $\chi^2 = 729$, $P < 0.001$), but locational effects on seed germination were not consistent across species (Fig. 4e-h). After 30 months of burial, average seed germination for *C. longipes* ranged from 0% at the 25 ha site to 40% at the Pearson site (Fig. 4f). Similar variation was also observed for *C. insignis* (Fig. 4e), *C. peltata* (Fig. 4g), and *J. copaia* (Fig. 4h).

Partial least square regressions identified individual fungal OTUs associated with seed germination. For each of the species we implemented a two-component PLSR model. The root mean square error of prediction (RMSEP) was 0.07 for *C. insignis*, 0.15 for *C. peltata*, 0.03 for *C. longipes*, and 0.02 for *J. copaia* (Table S6). High RMSEP values for *C. insignis* and *C. peltata* indicate that the predictive power of the two-component PLSR models had low accuracy for these species. For *C. longipes* and *J. copaia*, respectively, 5 of 19 OTUs and 3 of 23 OTUs represented by at least four isolates had positive or negative associations with seed germination. For these eight OTUs the absolute value of the loadings was 0.4 or higher. The highlighted OTUs were OTU 7 (*Trichoderma* sp. 1), OTU 9 (*Trichoderma* sp. 2), OTU 17 (*Lasiodiplodia* sp.), OTU 25 (*Xylaria* sp. 1), OTU 36 (*Diaporthe* sp.), OTU 38 (*Pleospora* sp.), OTU 48 (*Fusarium* sp.), and OTU 98 (*Xylaria* sp. 2).

Overall, four OTUs were isolated preferentially from seed bags associated with high germination success and one OTU was associated with seed bags with low germination success (Fig. 5). These OTUs were not the same in all species of seeds (Fig. 5).

Collectively, eight OTUs highlighted by the PLSR analysis (4.8% of the total OTUs) accounted for 65.6% of the fungal collections. For example, the two most abundant OTUs in the dataset, OTU 7 and OTU 9, represented *Trichoderma* and each accounted for 18.5% of the fungal collections. These OTUs were isolated from three and four species of seeds respectively, but they were only commonly associated with seeds of *C. peltata* and *C. longipes* (Fig. S6; Table S7).

Discussion

Plant pathogens are a major source of seed and seedling mortality in tropical forests (Augspurger 1984; Dalling *et al.* 1998), and are increasingly recognized for playing a fundamental role in the maintenance of diversity (Bagchi *et al.* 2014). In this study we found strong evidence that *Cecropia* species with similar seed traits and overall life-histories (Dalling, Swaine, & Garwood 1997; Zalamea *et al.* 2018) acquire distinct fungal communities when exposed to the same soils in common-garden settings. This finding provides strong support for the common assumption of host-differentiation of fungal communities, a prerequisite for the density-dependent regulation of population densities via fungal pathogens.

Cecropia seeds are common in the soil seed bank at BCI (Dalling *et al.* 1997). Reports on the ability of seeds to persist are contradictory and vary dramatically from transient (Alvarez-Buylla & Martínez-Ramos 1990; Dalling *et al.* 1997; Zalamea *et al.* 2018) to long-lived (Holthuijzen & Boerboom 1982). However, in the case where seeds were found to be long-lived, they were protected from pathogens and predators by earthenware pots (Holthuijzen & Boerboom 1982), suggesting that exposure to enemies, including fungal pathogens, may be a key factor determining seed longevity in *Cecropia*.

We found that after burying the same batches of seeds for each of the four species in five common gardens in the forest understory, the proportion of germinable seeds decreased gradually over time for *Cecropia spp.* and *J. copaia*. We infer that pathogens had a primary role in explaining variation in seed mortality among seed bags that were buried in close proximity because (i) seeds were protected from insect predators; (ii) we found no evidence for fatal germination (germinated seeds in bags); (iii) within species, although seed germination decreased gradually over time (suggesting a natural process of seed aging), variance in seed survival among bags of buried seeds remained high at the end of the experiment (e.g., ranging by as much as 0-100% for *C. peltata*); and (iv) previous experiments at BCI using the same species (*C. insignis*) and the same methodology (seeds enclosed in mesh bags) has shown that application of fungicide significantly increased seed survival (Dalling *et al.* 1998). We explore this in further detail below.

Seed fungal infection rates and seed survival

We predicted that as fungi encounter seeds in the soil, the proportion of infected seeds would increase over time, and that if most culturable fungi are pathogens and saprotrophs, then infection rates would be higher for dead seeds than live seeds. Instead, we found that the isolation frequency of fungi remained constant over time for *J. copaia,* and decreased for *C. peltata*, *C. longipes* and to a lesser extent for *C. insignis*. For all species, infection rates were similar between viable and inviable seeds. We also found that the two species with the highest infection rates had the highest survival after 30 months of burial. These results together suggest that high germinability in some bags is not due to a lack of fungal colonization, but due to associations with non-lethal fungi (also see the section below: "*Seed-associated fungi and their consequences for seed survival,"* in which we describe the concept of *functional specificity*). Declines over time in the proportion of seeds yielding culturable fungi cannot be attributed to the selective loss of infected seeds because the number of seeds that we retrieved per bag did not decline over time. Instead, either fungi became more difficult to culture out of older seeds, or some seeds lost infections over time.

Local tree species abundance, seed survival, and fungal diversity

Variation in seed mortality may reflect intrinsic seed traits or local tree species abundance. High host local abundance could enhance pathogen transmission among hosts, resulting in an increased pathogen inoculum and decreased seed survival. Alternatively, host relative abundance itself may be conditioned by pathogens. In temperate grassland, and in the BCI forest, host relative abundance is negatively correlated with susceptibility to soil-borne pathogens that reduce seedling growth (Klironomos 2002; Mangan *et al.* 2010). In contrast, the two locally abundant species in this study, *C. insignis* and *J. copaia*, had relatively low seed survival after 30 months of burial (14.6% and 8.0% respectively), compared to the locally rare species *C. longipes* (20.4%) and *C. peltata* (31.3%). Although the proportion of germinable seeds decreased over time, particularly over the first year, strong intraspecific variation in seed survival was evident among seed bags. Seeds that were buried only 40 cm apart therefore encountered markedly different fates. After 30 months of burial, a few seed bags consistently had >60% seed viability while others reached zero. Without inoculation experiments we cannot definitively attribute variation in seed survival to variation in fungal community composition. Nonetheless, strong spatial structure in soil microbial communities is consistent with this pattern (Barberán *et al.* 2014), and in the absence of other sources of mortality, suggests that that seed survival patterns are likely influenced by the frequency with which seeds encounter fungal pathogens to which they are susceptible.

We predicted that locally abundant species would be infected by more diverse fungal communities, reflecting greater opportunities for host specialization. However, while the phylogenetic diversity and to a lesser extent alpha diversity of fungi associated with buried seeds varied across species, local abundance was not a strong predictor of fungal diversity. *Jacaranda copaia* and *C. longipes*, the most abundant and least abundant species in our study, harboured the most diverse communities of seed-associated fungi measured as by both Fisher's alpha and Faith's phylogenetic diversity. Fungal diversity also was unrelated to the frequency with which culturable fungi were isolated from seeds: *C. peltata* had the least diverse community of seed-associated fungi, but the highest isolation frequency of the four species. Thus, although our study was restricted to only four species, these results suggest that local abundance of host species is not associated with the diversity of culturable fungi associated with seeds.

Phylogenetic structure and taxonomy of seed-associated fungal communities

The fungi isolated from seeds represent a broad range of phylogenetic lineages. We predicted that congeneric *Cecropia* species would harbour distinct fungal communities from one another, and that these communities differ from the one associated with the more distantly related *J. copaia*, resulting in clusters of related fungi which are capable of infecting a particular host. Our results support our prediction. We found that phylogenetic composition of Ascomycota differed among tree species and show that fungal communities infecting a particular host were more closely related than expected by chance. However, this result is largely driven by *J. copaia*, where clustering tended to occur deeper in the phylogeny, with higher than expected mean phylogenetic distance and higher Faith's phylogenetic diversity. Studies of plant-microbial associations in tropical forests often reveal associations at the family level or genus level. For instance, Liu et al. (2016) found that phylogenies between tree hosts and their potential fungal pathogens were congruent, consistent with our observation of distinctive fungal communities at the OTU level and in a phylogenetic context for *J. copaia* vs. the *Cecropia* species considered here.

The diversity of seed-associated fungi represents taxa with varying degrees of phylogenetic relatedness. Foliar endophytes are primarily filamentous Ascomycota (mainly Pezizomycotina), including many species within the classes Sordariomycetes and Dothideomycetes (Arnold 2008; U'Ren *et al.* 2009). In common with previous studies of seed fungi, we found that these two classes also accounted for more than 90% of the seed infecting fungi (Nelson 2018). Although seed microbiomes have been proposed to be less diverse than foliar microbiomes (Arnold *et al.* 2003; Newcombe *et al.* 2018), we found that common leaf endophyte genera such as *Xylaria, Fusarium,* and *Trichoderma* (Arnold 2008) were also well represented in seeds. The eight most influential fungal OTUs highlighted by the PLSR analysis also belonged to genera commonly associated with seeds in temperate and tropical ecosystems, including seeds studied previously at BCI (Kluger *et al.* 2008; Gallery *et al.* 2010; Klaedtke *et al.* 2016; Sarmiento *et al.* 2017; Nelson 2018).

Seed-associated fungi and their consequences for seed survival

To limit damage by herbivores and pathogens, plants have evolved an array of physical and chemical seed defences (Gripenberg *et al.* 2017; Dalling, Davis, Arnold, Sarmiento, & Zalamea 2020). Species with quiescent seeds, however, invest relatively little in chemical and physical defences compared to more persistent dormant seeds (Zalamea *et al.* 2018), which makes them especially susceptible to fungal infection (Sarmiento *et al.* 2017). While most pathogens show a degree of specificity and are unable to attack the majority of plant species (Parker & Gilbert 2004), closely related taxa are more likely to share susceptibility to the same foliar pathogens (Gilbert &

Webb 2007) as a result of phylogenetically conserved defensive traits. In contrast, we found that even co-occurring congeneric plant species with overlapping habitat requirements differ in infections from a common soil fungal community. For example, OTU 9 (the second most abundant OTU in the dataset; *Trichoderma* sp.), which accounted for 39% of infections in *C. peltata* (isolated from all burial durations and locations), was rare on *C. insignis* (3% of infections), accounted for 9% of infections in *C. longipes*, and was almost absent on *J. copaia* (0.6% of infections).

While common OTUs in our fungal community tended to be associated with, or occur predominantly on, a single host, the majority of OTUs represented by more than four sequences (64%) were isolated from multiple hosts. Overall, 15% of OTUs were present in all three *Cecropia* species. A lack of strict host-specificity among these OTUs does not preclude them from having species-specific demographic effects on their hosts that promote diversity in plant communities. Experimental work has shown that some fungal isolates can exhibit functional specificity, where the same fungal isolate infects but differentially impacts germination and seed viability of different plant species (Benítez, et al, Sarmiento et al 2017). For example, Sarmiento *et al.* (2017) found that species of *Lasiodiplodia* can colonize several species of seeds, with negative effects on seed viability of one host (e.g., *Ficus insipida*), but not others (e.g., *Trema micrantha*). We found also evidence to support earlier findings suggesting that colonization of seeds by particular fungi is associated with variation in seed survival and germination (Gallery, Dalling, & Arnold 2007). The PLSR analysis indicated that the abundance of eight fungal OTUs was either negatively or positively associated with seed germination in *C. longipes* and *J. copaia*. Moreover, five of the eight OTUs highlighted by the PLSR analysis were isolated more commonly than expected by chance from seed bags in which the germination was low (OTU 7) or high (OTUs 9, 17, 36, and 48). Although our results do not yet provide sufficient evidence to draw firm conclusions about the functional role of individual fungal OTUs on seed germination and survival, they provide the basis for taxon selection for future experiments.

Implications for species coexistence

Cecropia species are distributed across a wide range of climates in the Neotropics but are particularly common in lowland forests (Berg & Franco-Roselli 2005). Very often pairs (or more) of *Cecropia* species are distributed in the same area (Zalamea *et al.* 2012), but differ in their habitats (e.g., stream-edges vs. landslides, gaps in old-growth vs. secondary forests, or high vs. low-P soils) (Folgarait & Davidson 1994; Dalling *et al.* 2009; Zalamea *et al.* 2016). This habitat partitioning has been attributed to trade-offs between growth and defence against herbivores (Folgarait & Davidson 1994). For instance, Dalling *et al.* (2009) showed evidence that habitat partitioning of *Cecropia* species in Central Panama is due in part to browsing preferences of herbivores. We found a high degree of compositional and phylogenetic dissimilarity among seed-infecting fungal communities on congeneric *Cecropia* species that share similar reproductive traits and regeneration requirements. This result shows that natural enemies such as seed pathogens also discriminate among congeneric species, suggesting that they represent an additional factor relevant to species coexistence. Our results also highlight that most of the interactions between the seeds and their associated fungi were not necessarily lethal, showing a possible mechanism by which soilborne seed-associated fungi can maintain population reservoirs by associating with hosts on which they are non-lethal at local and regional scales.

Seeds are often colonized by fungi, but the diversity of seed-infecting microbes is low when compared to leaves (Arnold *et al.* 2003; Sarmiento *et al.* 2017; Newcombe *et al.* 2018). Consistent with previous studies, we found that individual seeds are often colonized by a single fungus (Sarmiento *et al.* 2017; Newcombe *et al.* 2018). This low microbial richness compared to other plant tissues makes seeds and their microbes attractive model systems when compared to other plant-microbial interactions. When four species of *Cecropia* were buried under the crowns of *C. insignis*, Gallery *et al*. (2007) found a lower survival rate of *C. insignis* seeds when compared to other species. This result supports prior work suggesting that detrimental effect of fungal pathogens on seeds and seedlings is the highest beneath the crown of conspecific trees in natural settings (Dalling *et al.* 1998; reviewed in Bever, Mangan, & Alexander 2015). Our burial locations were selected to avoid conspecific adult neighbourhoods, but the results found in this study suggest that future work should be extended to neighbourhoods surrounding focal tree species, and thus determine whether there is a spatial aggregation of host-specific fungal taxa responsible for density-dependent seed mortality.

Acknowledgements

This research was funded by NSF DEB-1120205 (to JWD and ASD) and NSF DEB-1119758 (to AEA). PCZ was supported by NSF DEB-1120205, by a grant from the Simons Foundation to the Smithsonian Tropical Research Institute (429440), and the University of South Florida. We thank the Smithsonian Tropical Research Institute for providing facilities, logistical support, and permission to conduct the project. We especially thank D. Roche, C. Delevich, A. Ndobegang, A. Pérez, I. Quintero, and E. Ryan for essential assistance in the field and in the laboratory.

Author Contributions

PCZ, CS, AEA, ASD and JWD conceived and designed the study; PCZ and CS collected the data; PCZ, CS and AF analysed the data; PCZ drafted the manuscript with contributions from JWD. All authors contributed substantially to the revisions and gave final approval for publication.

Data Availability Statement

Sequences used in this study are deposited in NCBI GenBank under accession numbers: KU977742 - KY775925 and MW529103 - MW530356. Germination data are available from the Dryad Digital Repository: doi:10.5061/dryad.qz612jmdq (Zalamea, et al., 2021).

ORCID

Paul-Camilo Zalamea 0000-0002-0987-4164

Carolina Sarmiento 0000-0002-8575-7170

A. Elizabeth Arnold 0000-0002-7013-4026

Adam S. Davis

Astrid Ferrer 0000-0001-9162-4959

James W. Dalling 0000-0002-6488-9895

Supporting information

Additional supporting information may be found online in the Supporting Information section.

References

Alvarez-Buylla, E. & Martínez-Ramos, M. (1990). Seed bank versus seed rain in the regeneration of a tropical pioneer tree. *Oecologia*, *84*, 314–325. https://doi.org/10.1007/BF00329755

Arnold, A. E. (2008). Endophytic fungi: hidden components of tropical community ecology. In W. P. Carson & S. A. Schnitzer (Eds.), *Tropical forest community ecology* (pp. 254–271). Wiley-Blackwell.

Arnold, A. E., Mejía, L. C., Kyllo, D., Rojas, E. I., Maynard, Z., Robbins, N. & Herre, E. A. (2003). Fungal endophytes limit pathogen damage in a tropical tree. *Proceedings of The National Academy of Sciences of The United States of America*, *100*, 15649–15654. https://doi.org/10.1073/pnas.2533483100

Augspurger, C. K. (1984). Seedling survival of tropical tree species: interactions of dispersal distance, light-gaps, and pathogens. *Ecology*, *65*, 1705–1712. https://doi.org/10.2307/1937766

Augspurger, C. K., & Wilkinson, H. T. (2007). Host specificity of pathogenic *Pythium* species: implications for tree species diversity. *Biotropica*, *39*, 702–708. https://doi.org/10.1111/j.1744-7429.2007.00326.x

Bagchi, R., Gallery, R. E., Gripenberg, S., Gurr, S. J., Narayan, L., Addis, C. E., Freckleton, R. P. & Lewis, O. T. (2014). Pathogens and insect herbivores drive rainforest plant diversity and composition. *Nature*, *506*, 85–88. https://doi.org/10.1038/nature12911

Baillie, I., Elsenbeer, H., Barthold, F., Grimm, R. & Stallard, R. (2006). A Semi-Detailed Soil Survey of Barro Colorado Island. Panama: Smithsonian Tropical Research Institute.

Barberán, A., Ramirez, K. S., Leff, J. W., Bradford, M. A., Wall, D. H. & Fierer, N. (2014). Why are some microbes more ubiquitous than others? Predicting the habitat breadth of soil bacteria. *Ecology Letters*, *17*, 794–802. https://doi.org/10.1111/ele.12282

Bell, T., Freckleton, R. P. & Lewis, O. T. (2006). Plant pathogens drive density-dependent seedling mortality in a tropical tree. *Ecology Letters*, *9*, 569–574. https://doi.org/10.1111/j.1461-0248.2006.00905.x

Benítez, M. -S., Hersh, M. H., Vilgalys, R. & Clark, J. S. (2013). Pathogen regulation of plant diversity via effective specialization. *Trends in Ecology & Evolution*, *28*, 705–711. https://doi.org/10.1016/j.tree.2013.09.005

Berg, C. & Franco-Rosselli, P. (2005). *Cecropia. Flora Neotropica Monograph 94*. New York Botanical Garden Press, New York.

Bever, J. D., Mangan, S. A. & Alexander, H. M. (2015). Maintenance of plant species diversity by pathogens. *Annual Review of Ecology, Evolution, and Systematics*, *46*, 305–325. https://doi.org/10.1146/annurev-ecolsys-112414-054306

Blaney, C. S. & Kotanen, P. M. (2001). Effects of fungal pathogens on seeds of native and exotic plants: a test using congeneric pairs. *Journal of Applied Ecology*, *38*, 1104–1113. https://doi.org/10.1046/j.1365-2664.2001.00663.x

Carbone, I., White, J. B., Miadlikowska, J., Arnold, A. E., Miller, M. A., Magain, N., U'Ren, J. M. & Lutzoni, F. (2019). T-BAS Version 2.1: Tree-Based alignment selector toolkit for evolutionary placement of DNA sequences and viewing alignments and specimen metadata on curated and custom trees. *Microbiology Resource Announcements*, *8*, 1160–5. https://doi.org/10.1128/MRA.00328-19

Chen, J., Bittinger, K., Charlson, E. S., Hoffmann, C., Lewis, J., Wu, G. D., Collman, R. G., Bushman, F. D. & Li, H. (2012). Associating microbiome composition with environmental covariates using generalized UniFrac distances. *Bioinformatics*, *28*, 2106–2113. https://doi.org/10.1093/bioinformatics/bts342

Comita, L. S., Queenborough, S. A., Murphy, S. J., Eck, J. L., Xu, K., Krishnadas, M., Beckman, N. & Zhu, Y. (2014). Testing predictions of the Janzen-Connell hypothesis: a meta-analysis of experimental evidence for distance- and density-dependent seed and seedling survival. *Journal of Ecology*, *102*, 845–856. https://doi.org/10.1111/1365-2745.12232

Dalling, J. W., Arnold, A. E., Davis, A. S., Sarmiento, C. & Zalamea, P. C. (2020). Extending plant defense theory to seeds. *Annual Review of Ecology, Evolution, and Systematics*, *51*, 123–141. https://doi.org/10.1146/annurev-ecolsys-012120-115156

Dalling, J. W. & Brown, T. A. (2009). Long-term persistence of pioneer species in tropical rain forest soil seed banks. *The American Naturalist*, *173*, 531–535. https://doi.org/10.1086/597221

Dalling, J. W., Pearson, T. R. H., Ballesteros, J., Sanchez, E. & Burslem, D. F. R. P. (2009). Habitat partitioning among neotropical pioneers: a consequence of differential susceptibility to browsing herbivores? *Oecologia*, *161*, 361–370. https://doi.org/10.1007/s00442-009-1385-y

Dalling, J. W., Swaine, M. D. & Garwood, N. C. (1997). Soil seed bank community dynamics in seasonally moist lowland tropical forest, Panama. *Journal of Tropical Ecology*, *13*, 659. https://doi.org/10.1017/S0266467400010853

Dalling, J. W., Swaine, M. D. & Garwood, N. C. (1998). Dispersal patterns and seed bank dynamics of pioneer trees in moist tropical forest. *Ecology*, *79*, 564–578. https://doi.org/10.1890/0012-9658(1998)079[0564:DPASBD]2.0.CO;2

Fine, P., Mesones, I. & Coley, P. (2004). Herbivores promote habitat specialization by trees in amazonian forests. *Science*, *305*, 663–665. https://doi.org/10.1126/science.1098982

Folgarait, P. & Davidson, D. (1994). Antiherbivore defenses of myrmecophytic *Cecropia* under different light regimes. *Oikos*, *71*, 305–320. https://doi.org/10.2307/3546279

Gallery, R. E., Dalling, J. W. & Arnold, A. E. (2007). Diversity, host affinity, and distribution of seed-infecting fungi: a case study with *Cecropia*. *Ecology*, *88*, 582–588. https://doi.org/10.1890/05-1207

Gallery, R. E., Moore, D. J. P. & Dalling, J. W. (2010). Interspecific variation in susceptibility to fungal pathogens in seeds of 10 tree species in the neotropical genus *Cecropia*. *Journal of Ecology*, *98*, 147–155. https://doi.org/10.1111/j.1365-2745.2009.01589.x

Gilbert, G. S. & Webb, C. O. (2007). Phylogenetic signal in plant pathogen-host range. *Proceedings of The National Academy of Sciences of The United States of America*, *104*, 4979–4983. https://doi.org/10.1073/pnas.0607968104

Gilbert, G. S., Ferrer, A. & Carranza, J. (2002). Polypore fungal diversity and host density in a moist tropical forest. *Biodiversity and Conservation*, *11*, 947–957. https://doi.org/10.1023/A:1015896204113

Gripenberg, S., Rota, J., Kim, J., Wright, S. J., Garwood, N. C., Fricke, E. C., Zalamea, P. C. & Salminen, J. -P. (2017). Seed polyphenols in a diverse tropical plant community. *Journal of Ecology*, *106*, 87–100. https://doi.org/10.1111/1365-2745.12814

He, Z., Zhang, H., Gao, S., Lercher, M. J., Chen, W. -H. & Hu, S. (2016). Evolview v2: an online visualization and management tool for customized and annotated phylogenetic trees. *Nucleic Acids Research*, *44*, W236–W241. https://doi.org/10.1093/nar/gkw370

Holthuijzen, A. & Boerboom, J. (1982). The *Cecropia* seedbank in the Surinam lowland rain forest. *Biotropica*, *14*, 62–68. https://doi.org/10.2307/2387761

Klaedtke, S., Jacques, M. -A., Raggi, L., Préveaux, A., Bonneau, S., Negri, V., Chable, V. & Barret, M. (2016). Terroir is a key driver of seed-associated microbial assemblages. *Environmental Microbiology*, *18*, 1792–1804. https://doi.org/10.1111/1462-2920.12977

Klironomos, J. N. (2002). Feedback with soil biota contributes to plant rarity and invasiveness in communities. *Nature*, *417*, 67–70. https://doi.org/10.1038/417067a

Kluger, C. G., Dalling, J. W., Gallery, R. E., Sanchez, E., Weeks-Galindo, C. & Arnold, A. E. (2008). Host generalists dominate fungal communities associated with seeds of four neotropical pioneer species. *Journal of Tropical Ecology*, *24*, 351–354. https://doi.org/10.1017/S0266467408005026

Lobova, T., Mori, S., Blanchard, F., Peckham, H. & Charles-Dominique, P. (2003). *Cecropia* as a food resource for bats in French Guiana and the significance of fruit structure in seed dispersal and longevity. *American Journal of Botany*, *90*, 388–403. https://doi.org/10.3732/ajb.90.3.388

Liu, X., Liang, M., Etienne, R. S., Gilbert, G. S. & Yu, S. (2016). Phylogenetic congruence between subtropical trees and their associated fungi. *Ecology and evolution*, *6*, 8412–8422. https://doi.org/10.1002/ece3.2503

Mangan, S. A., Schnitzer, S. A., Herre, E. A., Mack, K. M. L., Valencia, M. C., Sanchez, E. I. & Bever, J. D. (2010). Negative plant-soil feedback predicts tree-species relative abundance in a tropical forest. *Nature*, *466*, 752–755. https://doi.org/10.1038/nature09273

Marthews, T. R., Burslem, D. F. R. P., Paton, S. R., Yangüez, F., & Mullins, C. E. (2008). Soil drying in a tropical forest: three distinct environments controlled by gap size. *Ecological Modelling*, *216*, 369–384. https://doi.org/10.1016/j.ecolmodel.2008.05.011

Mevik, B. -H., Wehrens, R. & Liland, K. H. (2019). pls: Partial least squares and principal component regression. R package version 2.7-1. https://CRAN.R-project.org/package=pls [accessed November 2019].

Mirarab, S., Nguyen, N., Guo, S., Wang, L. -S., Kim, J. & Warnow,T. (2015). PASTA: Ultra-large multiple sequence alignment for nucleotide and amino-acid sequences. *Journal of Computational Biology*, *22*, 377–386. https://doi.org/10.1089/cmb.2014.0156

Mommer, L., Cotton, T. A., Raaijmakers, J. M., Termorshuizen, A. J., van Ruijven, J., Hendriks, M., van Rijssel, S. Q., van de Mortel, J. E., van der Paauw, J. W., Schijlen, E. G. & Smit-Tiekstra, A. E. (2018). Lost in diversity: the interactions between soil-borne fungi, biodiversity and plant productivity. *New Phytologist*, *218*, 542–553. https://doi.org/10.1111/nph.15036

Monacell, J. T. & Carbone, I. (2014). Mobyle SNAP Workbench: a web-based analysis portal for population genetics and evolutionary genomics. *Bioinformatics*, *30*, 1488–1490. https://doi.org/10.1093/bioinformatics/btu055

Nelson, E. B. (2018). The seed microbiome: Origins, interactions, and impacts. *Plant and Soil*, *422*, 7–34. https://doi.org/10.1007/s11104-017-3289-7

Newcombe, G., Harding, A., Ridout, M. & Busby, P. E. (2018). A hypothetical bottleneck in the plant microbiome. *Frontiers in microbiology*, *9*, 1645. https://doi.org/10.3389/fmicb.2018.01645

Oksanen, J., Blanchet, F. G., Friendly, M., Kindt, R., Legendre, P., McGlinn, D., Minchin, P. R., OHara, R. B., Simpson, G. L., Solymos, P., Stevens, M. H. H., Szoecs, E. & Wagner, H. (2019). vegan: community ecology package, R package Version 2.3-4. https://CRAN.R-project.org/package=vegan [accessed November 2019].

Paradis E. & Schliep K. 2019. ape 5.0: an environment for modern phylogenetics and evolutionary analyses in R. *Bioinformatics*, *35*, 526–528. https://doi.org/10.1093/bioinformatics/bty633

Parker, I. M. & Gilbert, G. S. (2004). The evolutionary ecology of novel plant-pathogen interactions. *Annual Review of Ecology, Evolution, and Systematics*, *35*, 675–700. https://doi.org/10.1146/annurev.ecolsys.34.011802.132339

Pearse, W. D., Cadotte, M. W., Cavender-Bares, J., Ives, A. R., Tucker, C. M., Walker, S. C. & Helmus, M. R. (2015). pez: phylogenetics for the environmental sciences. *Bioinformatics*, *31*, 2888–2890. https://doi.org/10.1093/bioinformatics/btv277

Pinheiro, J., Bates, D., DebRoy, S., Sarkar, D. & R Core Team (2020). nlme: linear and nonlinear mixed effects models. *R package version* 3.1-149. https://CRAN.R-project.org/package=nlme [accessed November 2020].

Queenborough, S. A., Burslem, D. F. R. P., Garwood, N. C. & Valencia, R. (2009). Taxonomic scale-dependence of habitat niche partitioning and biotic neighbourhood on survival of tropical tree seedlings. *Proceedings of The Royal Society B-Biological Sciences*, *276*, 4197–4205. https://doi.org/10.1098/rspb.2009.0921

Ruzi, S., Roche, D., Zalamea, P. C., Robison, A. & Dalling, J. W. (2017). Species identity influences secondary removal of seeds of Neotropical pioneer tree species. *Plant Ecology*, *218*, 983–995. https://doi.org/10.1007/s11258-017-0745-7

Sarmiento, C., Zalamea, P. C., Dalling, J. W., Davis, A. S., Stump, S. M., U'Ren, J. M. & Arnold, A. E. (2017). Soilborne fungi have host affinity and host-specific effects on seed germination and survival in a lowland tropical forest. *Proceedings of the National Academy of Sciences*, *114*, 11458–11463. https://doi.org/10.1073/pnas.1706324114

Shaffer, J. P., U'Ren, J. M., Gallery, R. E., Baltrus, D. A. & Arnold, A. E. (2017). An endohyphal bacterium (*Chitinophaga*, Bacteroidetes) alters carbon source use by *Fusarium keratoplasticum* (*F. solani* species complex, Nectriaceae). *Frontiers in microbiology*, *8*, 350. https://doi.org/10.3389/fmicb.2017.00350

Thompson, K. (2000). The functional ecology of soil seed banks. In *Seeds: the ecology of regeneration in plant communities*, 2nd ed, (pp. 215–235). CABI, Wallingford.

U'Ren, J. M., Dalling, J. W., Gallery, R. E., Maddison, D. R., Davis, E. C., Gibson, C. M. & Arnold, A. E. (2009). Diversity and evolutionary origins of fungi associated with seeds of a neotropical pioneer tree: a case study for analysing fungal environmental samples. *Mycological Research*, *113*, 432–449. https://doi.org/10.1016/j.mycres.2008.11.015

U'Ren, J. M., Lutzoni, F., Miadlikowska, J., Laetsch, A. D. & Arnold, A. E. (2012). Host and geographic structure of endophytic and endolichenic fungi at a continental scale. *American Journal of Botany*, *99*, 898–914. https://doi.org/10.3732/ajb.1100459

Wang, Y., Naumann, U., Wright, S. T. & Warton, D. I. (2012). mvabund- an R package for model-based analysis of multivariate abundance data. *Methods in*

Ecology and Evolution, *3*, 471–474. https://doi.org/10.1111/j.2041-210X.2012.00190.x

Windsor, D. M. (1990). Climate and moisture variability in a tropical forest: long-term records from Barro Colorado Island, Panama. *Smithsonian Contributions to the Earth Sciences*, *29*, 1–145. https://doi.org/10.5479/si.00810274.29.1

Zalamea, P. C., Dalling, J. W., Sarmiento, C., Arnold, A. E., Delevich, C., Berhow, M. A., Ndobegang, A., Gripenberg, S. & Davis, A. S. (2018). Dormancy-defense syndromes and tradeoffs between physical and chemical defenses in seeds of pioneer species. *Ecology*, *99*, 1988–1998. https://doi.org/10.1002/ecy.2419

Zalamea, P. C., Heuret, P., Sarmiento, C., Rodríguez, M., Berthouly, A., Guitet, S., Nicolini, E., Delnatte, C., Barthelemy, D. & Stevenson, P. R. (2012). The genus *Cecropia*: a biological clock to estimate the age of recently disturbed areas in the Neotropics. *PLoS ONE*, *7*, e42643. https://doi.org/10.1371/journal.pone.0042643

Zalamea, P. C., Sarmiento, C., Arnold, A. E., Davis, A. S. & Dalling, J. W. (2015). Do soil microbes and abrasion by soil particles influence persistence and loss of physical dormancy in seeds of tropical pioneers? *Frontiers in Plant Science*, *5*, 799. https://doi.org/10.3389/fpls.2014.00799

Zalamea, P. C., Turner, B. L., Winter, K., Jones, F. A., Sarmiento, C., & Dalling, J. W. (2016). Seedling growth responses to phosphorus reflect adult distribution patterns of tropical trees. *New Phytologist*, *212*, 400–408. https://doi.org/10.1111/nph.14045

Zalamea, P. C., Sarmiento, C., Arnold, A. E., Davis, A. S., Ferrer, A., & Dalling, J. W. (2021) Data from: Closely related tree species support distinct communities of seed-associated fungi in a lowland tropical forest. Dryad Digital Repository. doi:10.5061/dryad.qz612jmdq

Figure and Table legends

Figure 1. Boxplot representation of isolation frequency of fungal isolates in quiescent seeds of tropical trees after burial in common gardens in a lowland tropical forest in Panama. (a) Frequency was calculated as the number of isolates divided by the number of seeds processed for each burial duration, and seed viability class including all the species together. (b) Frequency was calculated as the number of isolates divided by the number of seeds processed for each burial duration and each species separately. For each boxplot, the boxes represent the lower and upper quartiles (25% and 75% of the observations). The bold line represents the median and whiskers

represent minimum and maximum values, excluding the outliers that are represented as stars.

Figure 2. Structure of seed-associated fungal communities. Non-metric multidimensional scaling (NMDS) analysis representing similarity among fungal communities (symbols) isolated from seeds of three different species of *Cecropia* and *Jacaranda copaia* (a-d). Panels (a) to (d) depict the same ordination but are color-coded to represent plant species (a), garden location (b), burial duration (c), and seed viability (d); stress = 0.107. Ellipses represent a standard deviation of point scores relative to their centroid. Venn diagram represents the percent of variation in fungal community composition explained by plant species, burial duration, garden location and seed viability, based on abundance data (e). Pairwise comparisons of fungal community similarity from abundance data for within vs. across comparisons of taxonomic, site, burial time and viability classes, $^{**}P < 0.001$, $^{*}P < 0.05$. (f).

Figure 3. Cladogram and taxonomic composition of seed-associated fungi isolated from *Cecropia insignis*, *C. longipes*, *C. peltata*, and *Jacaranda copaia.* (a) Circular cladogram including 156 fungal OTUs (i.e., all OTUs of Ascomycota observed in the present study) created in EvolView from an RAxML maximum likelihood analysis based on partial LSU rDNA sequences. Species from T-BAS were used to construct the backbone, then filtered to only include seed-associated fungi via the R package *ape* v.5.3. Each outer circle represents a host species. The size of the bubbles indicates the relative abundance for each OTU across host species. Arrows indicate the eight OTUs highlighted by the PLS regression analysis and squares represent fungal classes *sensu lato*. The stacked bars represent the relative frequency and taxonomic

composition of seed-associated fungi at the class (b) and order (c) levels. Numbers on top of each bar represent the number of isolates for which we obtained sequences.

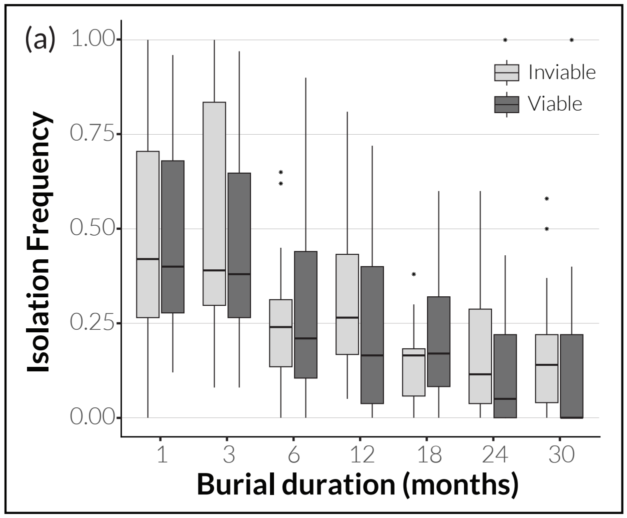
Figure 4. Percentage of germinable seeds of (a) *Cecropia insignis*, (b) *C. longipes*, (c) *C. peltata*, and (d) *Jacaranda copaia* recovered at seven-time intervals after burial (i.e., 1, 3, 6, 12, 18, 24, and 30 months) for all plots combined (a-d), and for each of the five burial locations separately (Ava, Drayton, 25 Ha, Pearson, and Zetek; e-h). Open circles show the percentage of germinable seeds recovered from a single bag; black squares show the mean and bars the standard error. The black line represents the loess regression using a smoothing span of 0.75.

Figure 5. Eight fungal OTUs from seed bags of *Cecropia longipes* and *Jacaranda copaia* with either low (<30%) or high (>70%) seed germination were identified as influential by PLSR. For any given OTU, the observed frequency reflects the proportion of isolates belonging to that OTU that came from low and high germination bags, respectively. The expected abundance is based on the prediction that isolates of a given OTU will be equally distributed in low- and high-germination bags. The n represents the number of isolates recovered for each particular OTU and seed species. OTU 7: *Trichoderma* sp. 1; 9: *Trichoderma* sp. 2; 17: *Lasiodiplodia* sp.; 25: *Xylaria* sp. 1; 36: *Diaporthe* sp.; 38: *Pleospora* sp.; 48: *Fusarium* sp.; 98: *Xylaria* sp. 2.

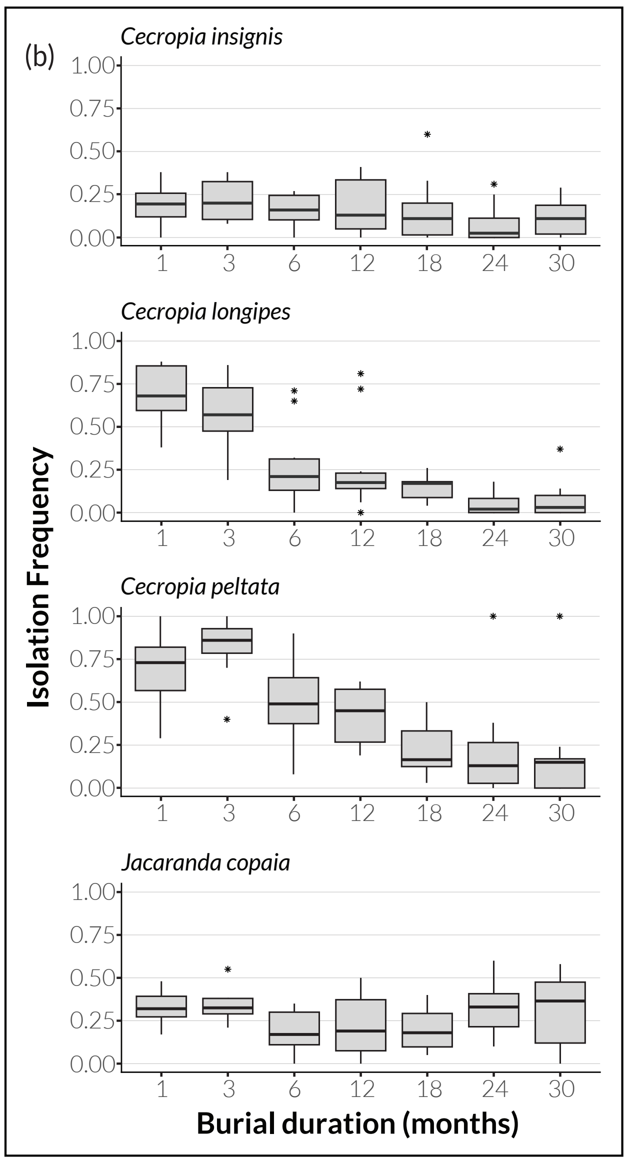
Table 1. Number of maternal seed sources, cultivable fungi and OTU of seed-associated fungi obtained from fresh and buried seeds of three species of *Cecropia*

and *Jacaranda copaia* in common gardens at Barro Colorado Island, Panama. Maternal sources were pooled at the outset of the experiment.

Figure 1.



(a)
Isolation Frequency
1.00
0.75
0.50
0.25
0.00
Inviable
Viable
1
3
6
12
18
24
30
Burial duration (months)



(b)
Cecropia insignis
Cecropia longipes
Cecropia peltata
Jacaranda copaia
Isolation Frequency
1.00
0.75
0.50
0.25
0.00
1
3
6
12
18
24
30
Burial duration (months)

Figure 2.

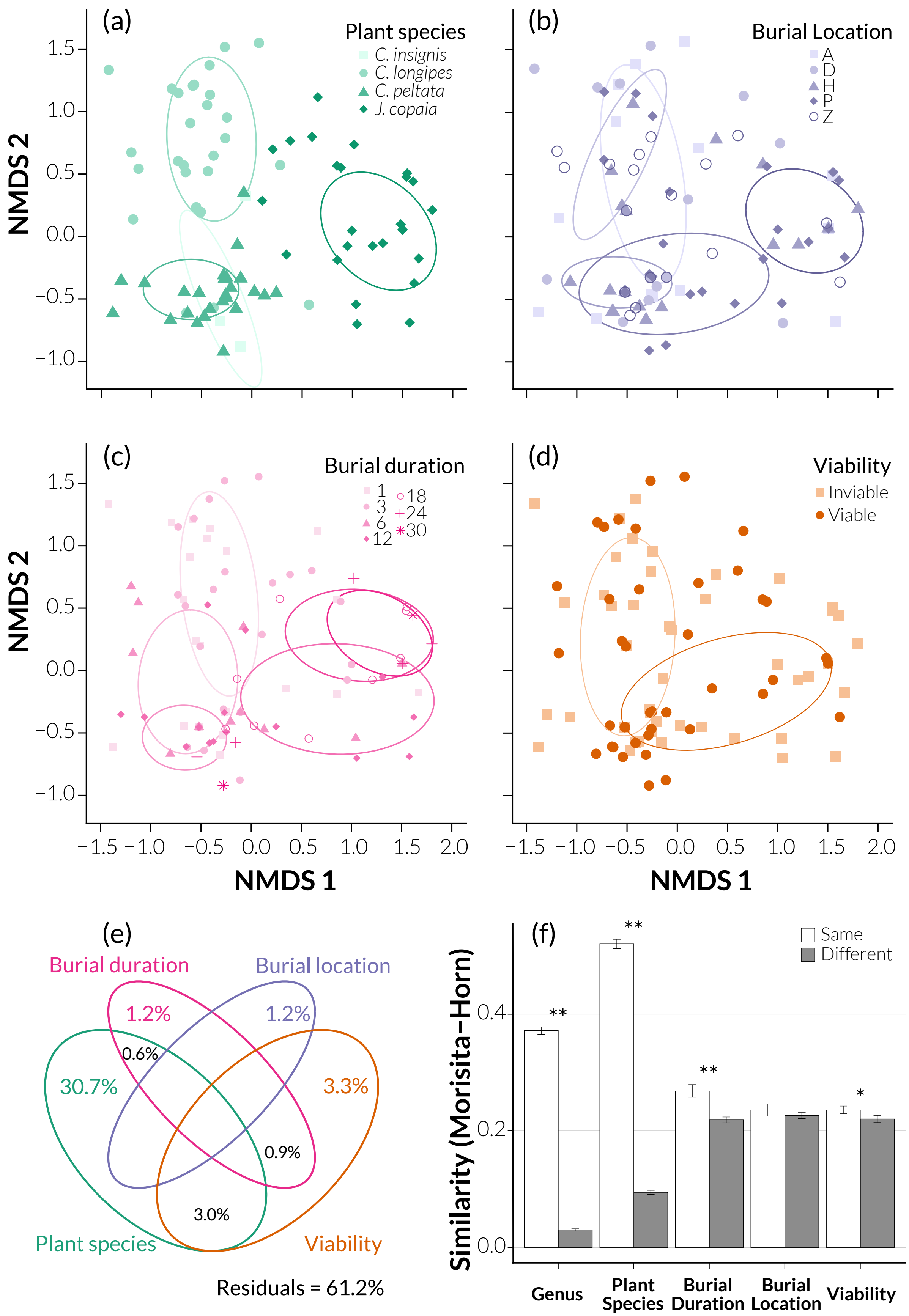

(a)
Plant species
C. insignis
C. longipes
C. peltata
J. copaia
(b)
Burial Location
A
D
H
P
Z
(c)
Burial duration
1
3
6
12
18
24
30
(d)
Viability
Inviable
Viable
NMDS 2
NMDS 1
1.5
1.0
0.5
0.0
−0.5
−1.0
−1.5
2.0
(e)
Burial duration
Burial location
Plant species
Viability
1.2%
1.2%
0.6%
30.7%
3.3%
0.9%
3.0%
Residuals = 61.2%
(f)
Same
Different
Similarity (Morisita−Horn)
0.4
0.2
0.0
**
**
**
*
Genus
Plant Species
Burial Duration
Burial Location
Viability

Figure 3.

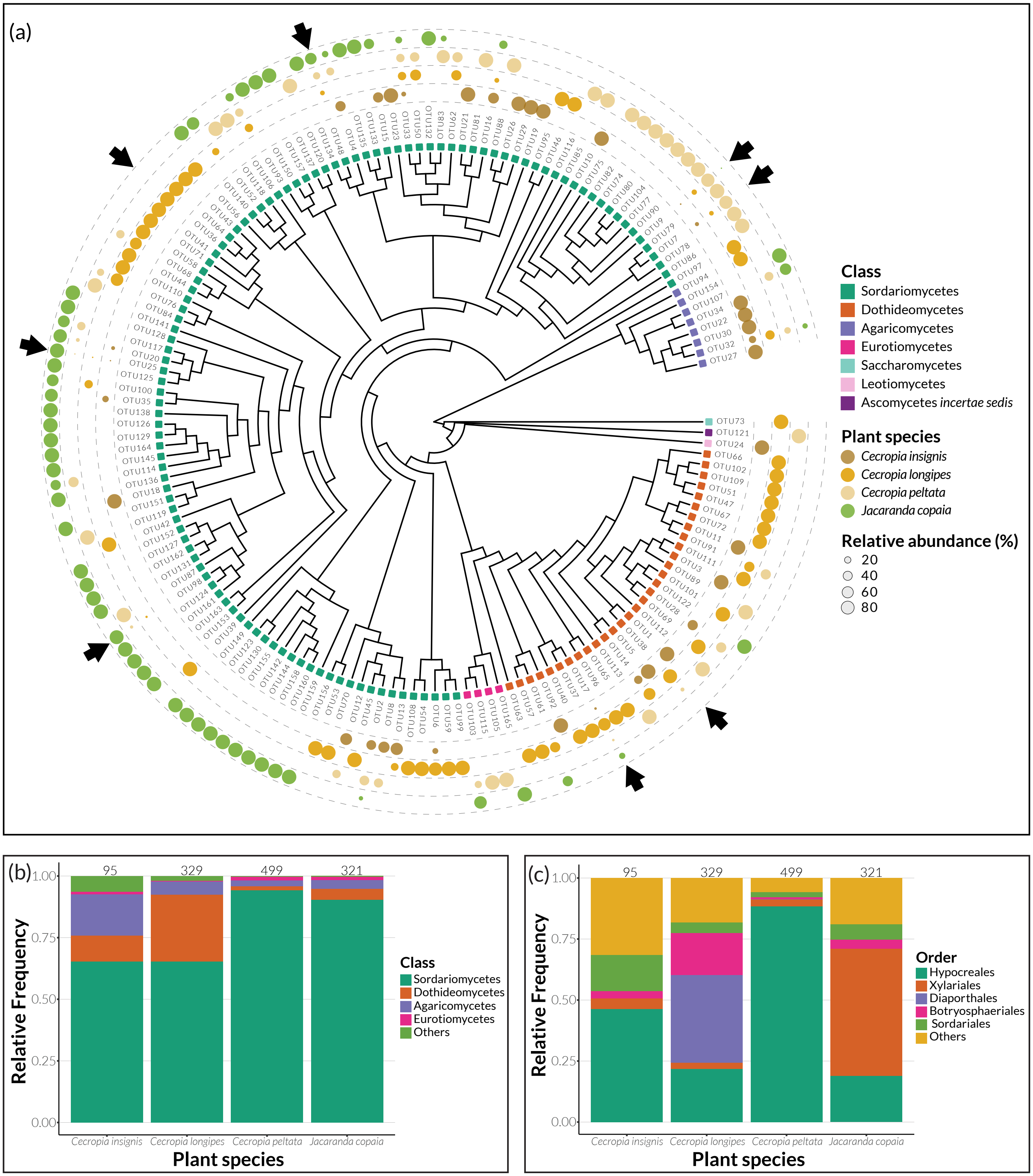

(a)
Class
Sordariomycetes
Dothideomycetes
Agaricomycetes
Eurotiomycetes
Saccharomycetes
Leotiomycetes
Ascomycetes *incertae sedis*
Plant species
Cecropia insignis
Cecropia longipes
Cecropia peltata
Jacaranda copaia
Relative abundance (%)
20
40
60
80
(b)
95
329
499
321
1.00
0.75
0.50
0.25
0.00
Relative Frequency
Class
Sordariomycetes
Dothideomycetes
Agaricomycetes
Eurotiomycetes
Others
Cecropia insignis
Cecropia longipes
Cecropia peltata
Jacaranda copaia
Plant species
(c)
95
329
499
321
1.00
0.75
0.50
0.25
0.00
Relative Frequency
Order
Hypocreales
Xylariales
Diaporthales
Botryosphaeriales
Sordariales
Others
Cecropia insignis
Cecropia longipes
Cecropia peltata
Jacaranda copaia
Plant species

Figure 4.

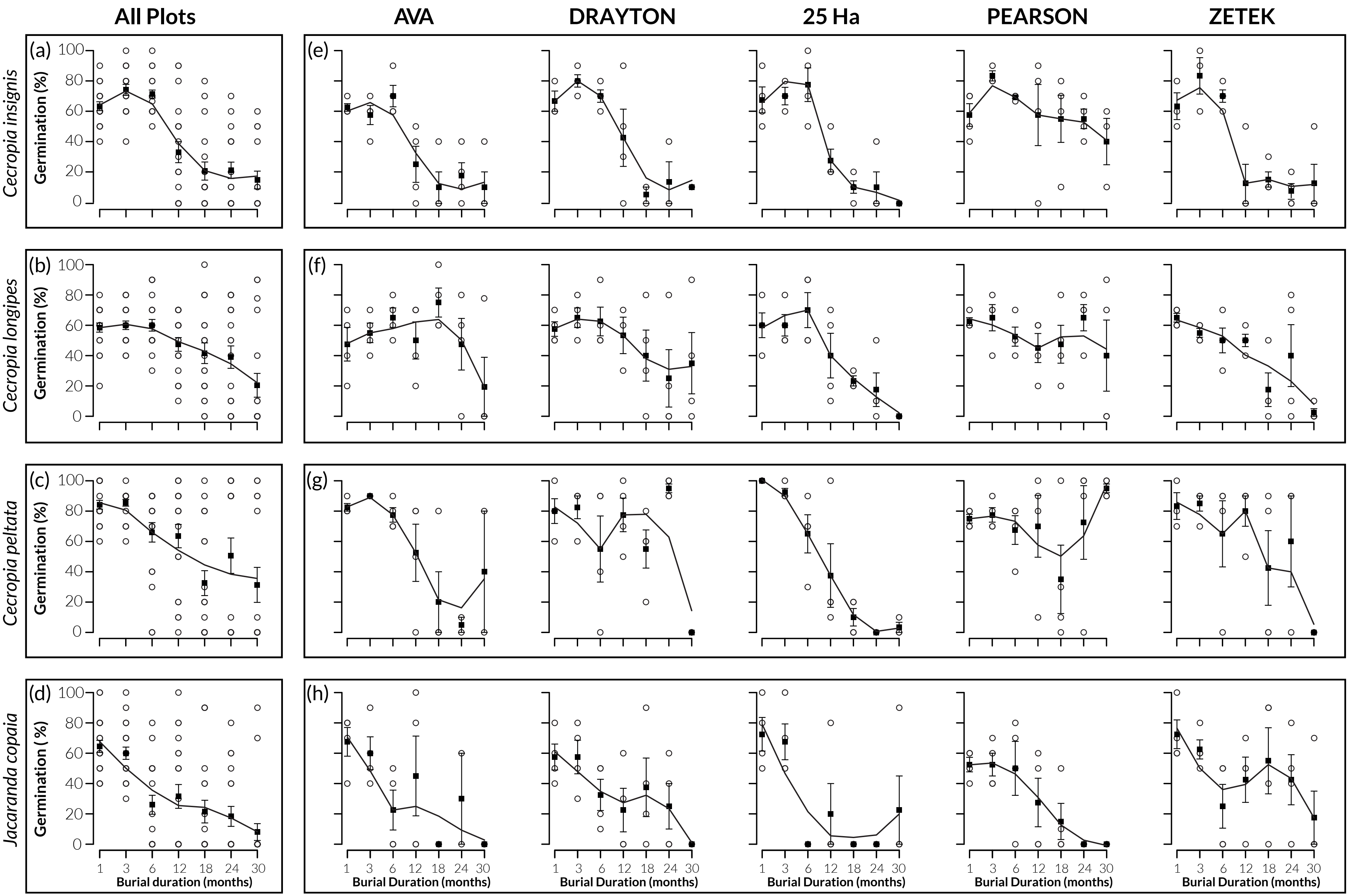
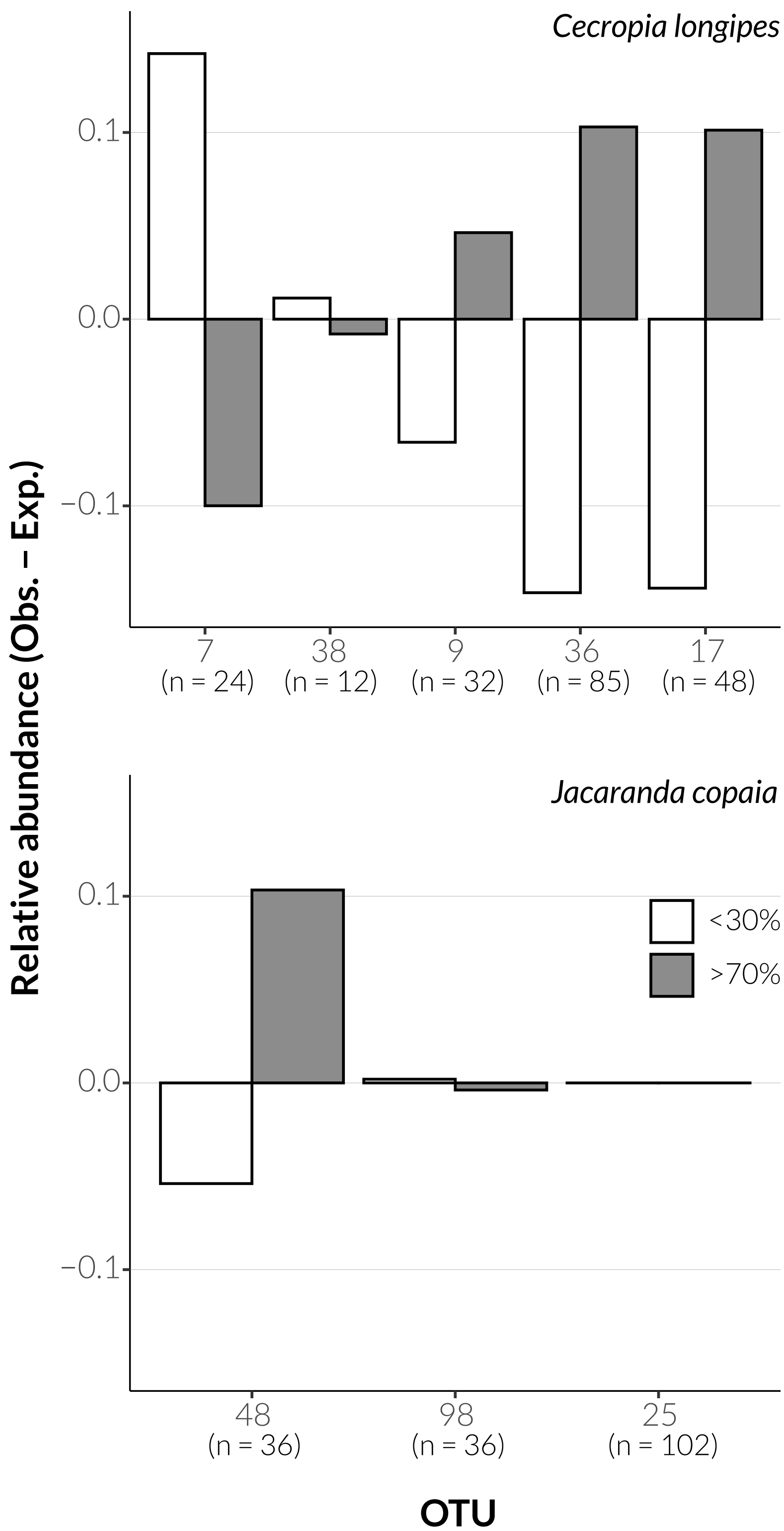

All Plots
AVA
DRAYTON
25 Ha
PEARSON
ZETEK
(a)
(b)
(c)
(d)
(e)
(f)
(g)
(h)
Cecropia insignis
Cecropia longipes
Cecropia peltata
Jacaranda copaia
Germination (%)
0
20
40
60
80
100
1
3
6
12
18
24
30
Burial duration (months)
Burial Duration (months)

Figure 5.



Cecropia longipes
0.1
0.0
−0.1
7
(n = 24)
38
(n = 12)
9
(n = 32)
36
(n = 85)
17
(n = 48)
Jacaranda copaia
<30%
>70%
48
(n = 36)
98
(n = 36)
25
(n = 102)
Relative abundance (Obs. – Exp.)
OTU

SUPPORTING INFORMATION

Closely related tree species support distinct communities of seed-associated fungi in a lowland tropical forest

Paul-Camilo Zalamea[1,2*], Carolina Sarmiento[1,2], A. Elizabeth Arnold[3,4], Adam S. Davis[5], Astrid Ferrer[6], James W. Dalling[2,6]

[1] Department of Integrative Biology, University of South Florida, Tampa, FL, USA
[2] Smithsonian Tropical Research Institute, Panama City, Republic of Panama
[3] School of Plant Sciences, The University of Arizona, Tucson, AZ, USA
[4] Department of Ecology and Evolutionary Biology, The University of Arizona, Tucson, AZ, USA
[5] Department of Crop Sciences, University of Illinois, Urbana, IL, USA
[6] Department of Plant Biology, University of Illinois, Urbana, IL, USA

*Correspondence: Paul-Camilo Zalamea
e-mail: paulcamiloz@usf.edu or camilozalamea@gmail.com

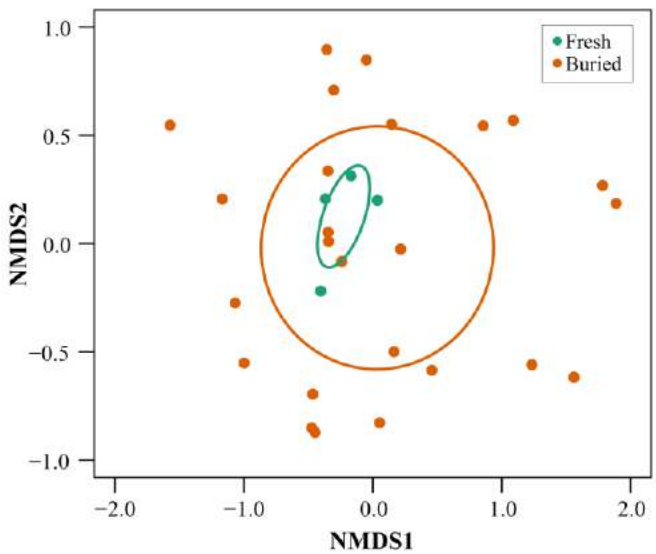


Figure S1. NMDS showing that communities of fungi isolated from fresh seeds of *Jacaranda copaia* did not differ significantly from those in buried seeds of that species.

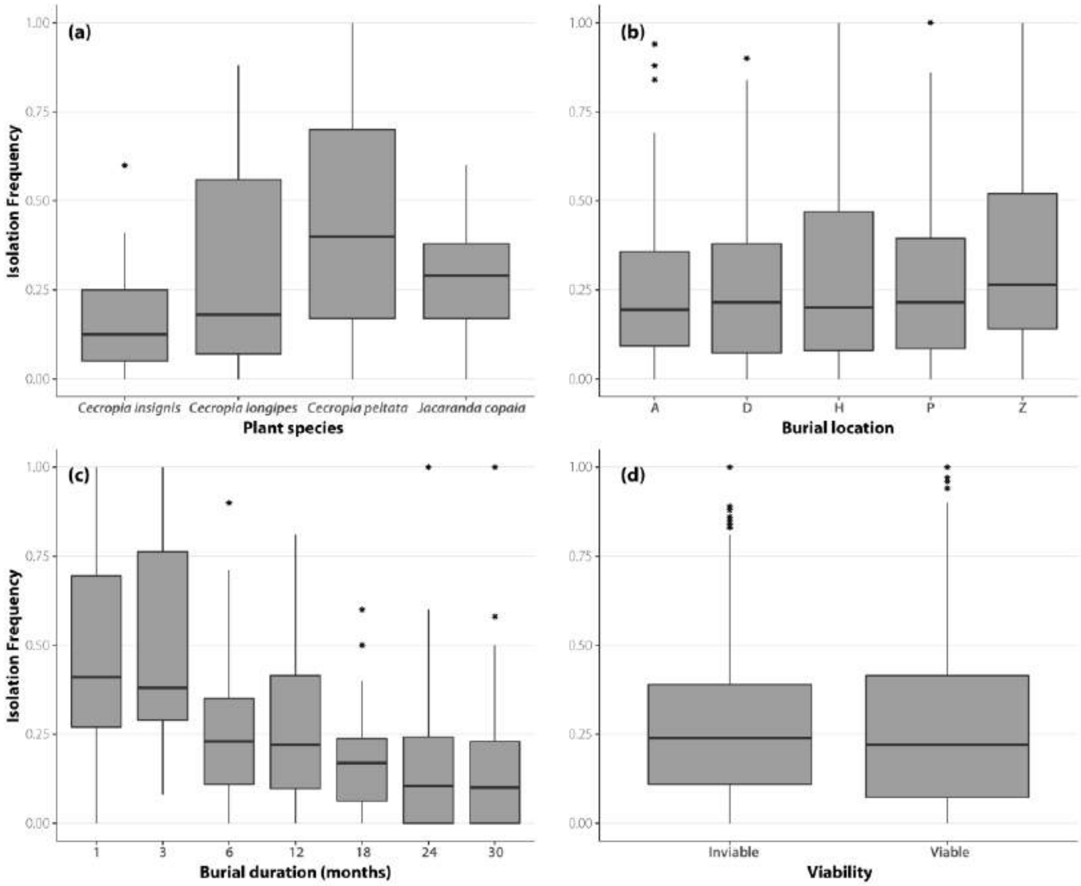


Figure S2. Boxplot representation of isolation frequency of fungal isolates in quiescent seeds of tropical trees after burial in common gardens in a lowland tropical forest in Panama. Frequency was calculated as the number of isolates divided by the number of seeds processed for each plant species (a), burial location (b), burial duration (c), and seed viability class (d). Burial location: A, Armour; D, Drayton; H, 25 ha; P, Pearson; and Z, Zetek. For each boxplot the boxes represent the lower and upper quartiles (25% and 75% of the observations). The bold line represents the median and whiskers represent minimum and maximum values, excluding the outliers that are represented as stars (values are shown in Table S3).

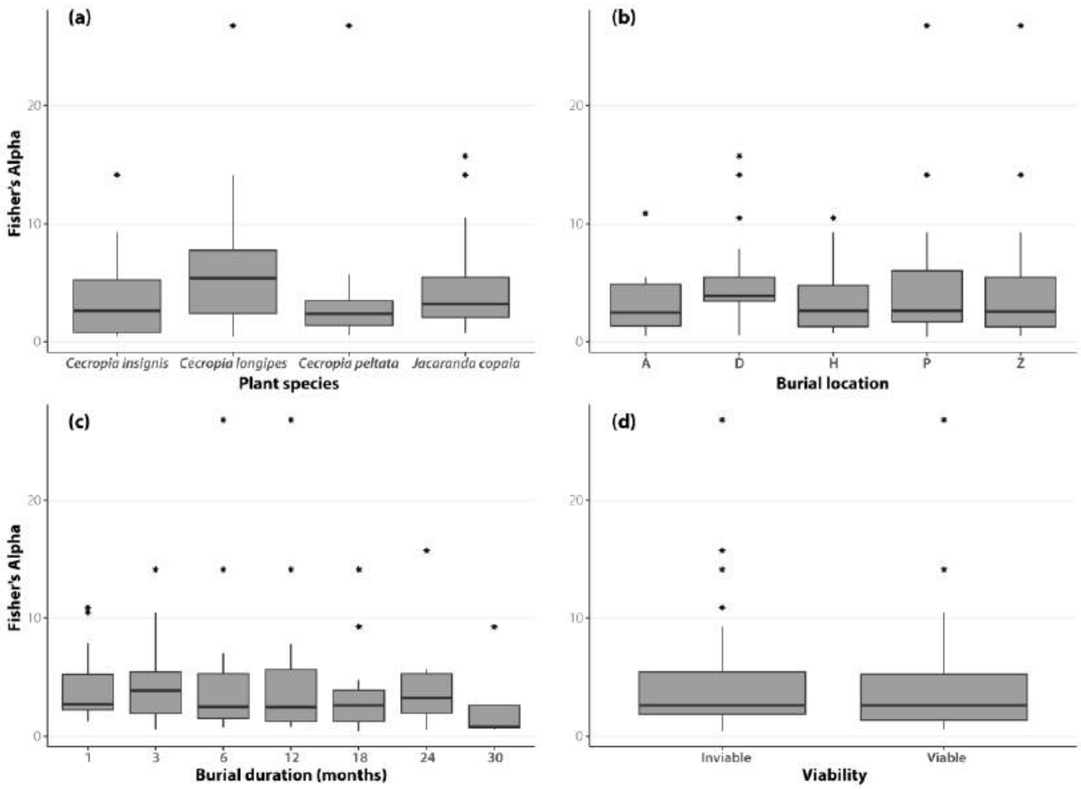


Figure S3. Boxplot representation of diversity of fungi isolated from seeds of tropical trees. Fisher's alpha was calculated with all sequenced isolates from each plant species (a), burial location (b), burial duration (c), and seed viability class (d). Burial location: A, Armour; D, Drayton; H, 25 ha; P, Pearson; and Z, Zetek. For each boxplot the boxes represent the lower and upper quartiles (25% and 75% of the observations). The bold line represents the median and whiskers represent minimum and maximum values, excluding the outliers that are represented as stars (values are shown in Table S4).

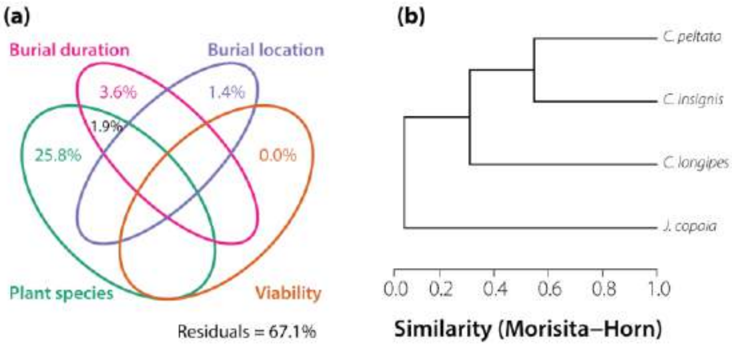


Figure S4. Venn diagram represents the percent of variation in fungal community composition explained by plant species, burial duration, garden location and seed viability, based on presence–absence data (a). Dendrogram representing Morisita–Horn similarities among communities of fungi, where tips represent fungal communities associated with each seed species (b).

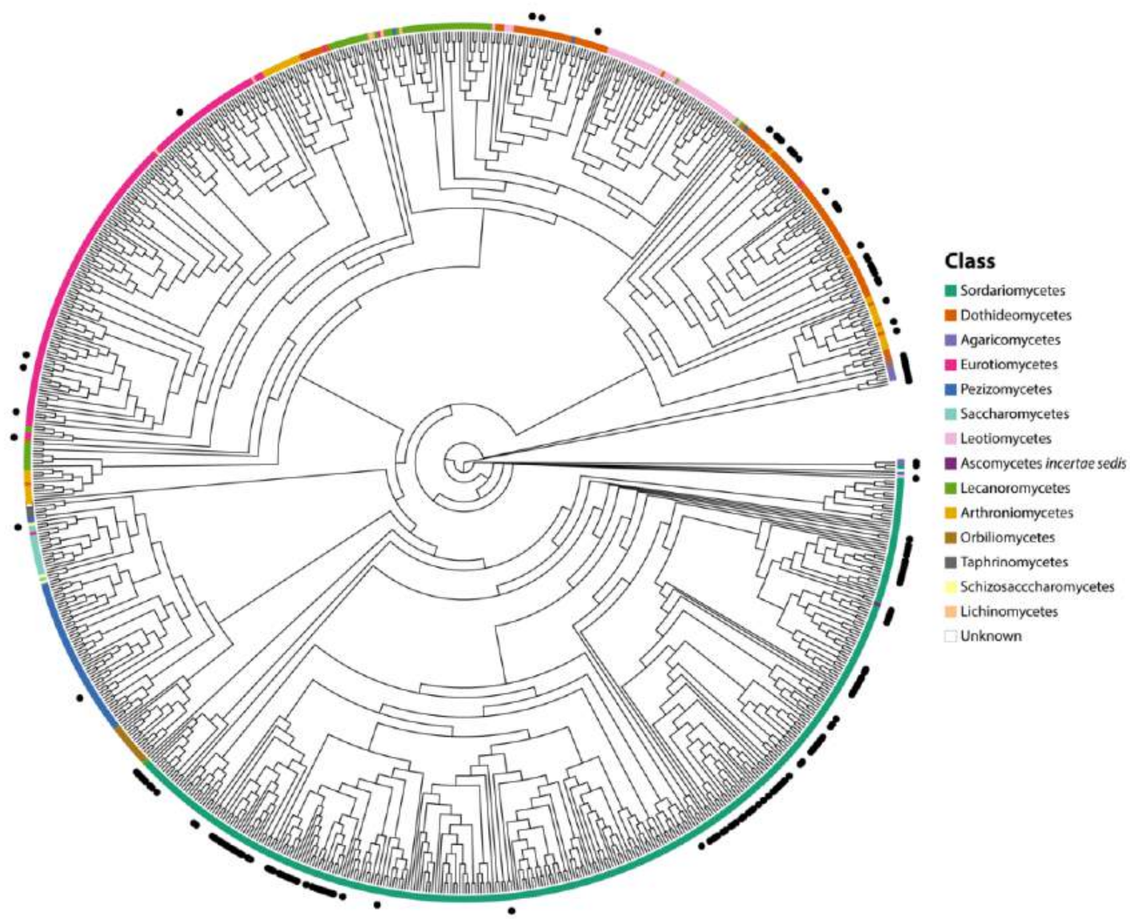


Figure S5. Circular cladogram created in EvolView from an RAxML analysis based on partial LSU sanger sequences. It includes 156 seed-associated fungal OTUs from this study (black dots) and 942 sequences from diverse Ascomycota from T-BAS, which were used to construct the backbone.

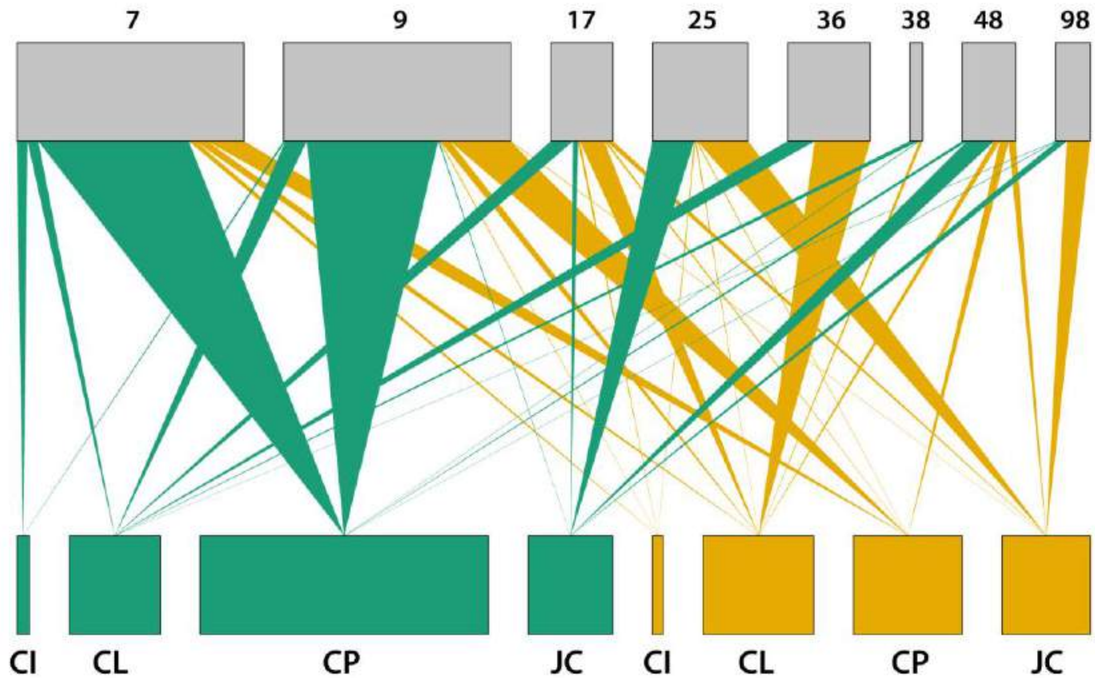


Figure S6. Associations between plant species and seed-associated fungi. Lines depict observed associations between the significant fungal OTUs on the PLSR analysis (top) and plant species (bottom), with line thickness proportional to the number of sequenced isolates per OTU from each plant species. Boxes representing plant species and lines are coloured to indicate viable (green) or inviable (orange) seeds. Box width is proportional to the number of sequences corresponding to each OTU (top) or the number of sequenced isolates from each plant species (bottom). CI represents *Cecropia insignis*, CL *Cecropia longipes*, CP *Cecropia peltata*, and JC *Jacaranda copaia*. OTU 7: *Trichoderma* sp. 1; 9: *Trichoderma* sp. 2; 17: *Lasiodiplodia* sp.; 25: *Xylaria* sp. 1; 36: *Diaporthe* sp.; 38: *Pleospora* sp.; 48: *Fusarium* sp.; 98: *Xylaria* sp. 2.

Table S1. Common garden names, forest age, and soil characteristics. Soil type, soil form, and parent material information are from Baillie et al. (2006).

Plot name	Forest age	Soil type/ Soil form/ Parent material
25 Ha	Young secondary forest	Marron/ brown fine loam/ Andesite
Armour	Secondary forest	AVA/ red light clay/ Andesite
Drayton	Old-growth forest	Fairchild/ red light clay/ Bohio
Pearson	Old-growth forest	Standley/ brown fine loam/ Bohio
Zetek	Old-growth forest	Marron/ brown fine loam/ Andesite

Table S3. Isolation frequency of seed-associated fungi. Isolation frequency was calculated as the number of isolates divided by the number of examined seeds, for each combination of plant species, burial duration (months), garden location, and seed viability. For garden location, letters correspond to the identity of each common garden: A, Armour; D, Drayton; H, 25 ha; P, Pearson; and Z, Zetek. Viability is represented as 0 = inviable seeds, and 1 = viable seeds.

Plant species	Burial duration	Garden location	Seed viability	Number of seeds	Number of isolates	Isolation frequency
Cecropia insignis	1	A	0	2	0	0.00
Cecropia insignis	1	A	1	33	4	0.12
Cecropia insignis	1	D	0	4	1	0.25
Cecropia insignis	1	D	1	25	3	0.12
Cecropia insignis	1	H	0	6	1	0.17
Cecropia insignis	1	H	1	29	11	0.38
Cecropia insignis	1	P	0	8	0	0.00
Cecropia insignis	1	P	1	32	7	0.22
Cecropia insignis	1	Z	0	8	3	0.38
Cecropia insignis	1	Z	1	19	5	0.26
Cecropia insignis	3	A	0	12	1	0.08
Cecropia insignis	3	A	1	26	2	0.08
Cecropia insignis	3	D	0	12	3	0.25
Cecropia insignis	3	D	1	23	2	0.09
Cecropia insignis	3	H	0	13	4	0.31
Cecropia insignis	3	H	1	20	3	0.15
Cecropia insignis	3	P	0	8	3	0.38
Cecropia insignis	3	P	1	18	6	0.33
Cecropia insignis	3	Z	0	8	3	0.38
Cecropia insignis	3	Z	1	20	3	0.15
Cecropia insignis	6	A	0	12	3	0.25
Cecropia insignis	6	A	1	20	4	0.20
Cecropia insignis	6	D	0	13	1	0.08
Cecropia insignis	6	D	1	24	6	0.25
Cecropia insignis	6	H	0	12	0	0.00
Cecropia insignis	6	H	1	22	6	0.27
Cecropia insignis	6	P	0	8	1	0.12
Cecropia insignis	6	P	1	18	2	0.11
Cecropia insignis	6	Z	0	13	3	0.23
Cecropia insignis	6	Z	1	21	2	0.10
Cecropia insignis	12	A	0	31	9	0.29
Cecropia insignis	12	A	1	9	0	0.00
Cecropia insignis	12	D	0	17	6	0.35
Cecropia insignis	12	D	1	14	0	0.00
Cecropia insignis	12	H	0	19	3	0.16

Cecropia insignis	12	H	1	10	1	0.10
Cecropia insignis	12	P	0	20	1	0.05
Cecropia insignis	12	P	1	19	1	0.05
Cecropia insignis	12	Z	0	29	12	0.41
Cecropia insignis	12	Z	1	10	4	0.40
Cecropia insignis	18	A	0	34	2	0.06
Cecropia insignis	18	A	1	5	1	0.20
Cecropia insignis	18	D	0	20	4	0.20
Cecropia insignis	18	D	1	5	3	0.60
Cecropia insignis	18	H	0	36	3	0.08
Cecropia insignis	18	H	1	4	0	0.00
Cecropia insignis	18	P	0	22	0	0.00
Cecropia insignis	18	P	1	18	0	0.00
Cecropia insignis	18	Z	0	37	5	0.14
Cecropia insignis	18	Z	1	3	1	0.33
Cecropia insignis	24	A	0	38	5	0.13
Cecropia insignis	24	A	1	2	0	0.00
Cecropia insignis	24	D	0	26	8	0.31
Cecropia insignis	24	D	1	4	1	0.25
Cecropia insignis	24	H	0	37	0	0.00
Cecropia insignis	24	H	1	3	0	0.00
Cecropia insignis	24	P	0	17	1	0.06
Cecropia insignis	24	P	1	23	0	0.00
Cecropia insignis	24	Z	0	37	2	0.05
Cecropia insignis	24	Z	1	3	0	0.00
Cecropia insignis	30	A	0	33	4	0.12
Cecropia insignis	30	A	1	7	2	0.29
Cecropia insignis	30	D	0	10	2	0.20
Cecropia insignis	30	D	1	2	0	0.00
Cecropia insignis	30	H	0	27	4	0.15
Cecropia insignis	30	H	1	3	0	0.00
Cecropia insignis	30	P	0	20	2	0.10
Cecropia insignis	30	P	1	13	1	0.08
Cecropia insignis	30	Z	0	34	8	0.24
Cecropia insignis	30	Z	1	6	0	0.00
Cecropia longipes	1	A	0	19	16	0.84
Cecropia longipes	1	A	1	21	12	0.57
Cecropia longipes	1	D	0	16	7	0.44
Cecropia longipes	1	D	1	24	9	0.38
Cecropia longipes	1	H	0	14	12	0.86
Cecropia longipes	1	H	1	26	23	0.88
Cecropia longipes	1	P	0	28	24	0.86
Cecropia longipes	1	P	1	12	8	0.67

Cecropia longipes	1	Z	0	16	11	0.69
Cecropia longipes	1	Z	1	24	16	0.67
Cecropia longipes	3	A	0	21	11	0.52
Cecropia longipes	3	A	1	21	4	0.19
Cecropia longipes	3	D	0	17	13	0.76
Cecropia longipes	3	D	1	24	14	0.58
Cecropia longipes	3	H	0	16	9	0.56
Cecropia longipes	3	H	1	24	11	0.46
Cecropia longipes	3	P	0	20	17	0.85
Cecropia longipes	3	P	1	23	8	0.35
Cecropia longipes	3	Z	0	21	18	0.86
Cecropia longipes	3	Z	1	19	12	0.63
Cecropia longipes	6	A	0	21	4	0.19
Cecropia longipes	6	A	1	19	6	0.32
Cecropia longipes	6	D	0	14	3	0.21
Cecropia longipes	6	D	1	26	0	0.00
Cecropia longipes	6	H	0	13	1	0.08
Cecropia longipes	6	H	1	27	3	0.11
Cecropia longipes	6	P	0	21	6	0.29
Cecropia longipes	6	P	1	19	4	0.21
Cecropia longipes	6	Z	0	26	17	0.65
Cecropia longipes	6	Z	1	14	10	0.71
Cecropia longipes	12	A	0	17	3	0.18
Cecropia longipes	12	A	1	22	3	0.14
Cecropia longipes	12	D	0	12	2	0.17
Cecropia longipes	12	D	1	18	1	0.06
Cecropia longipes	12	H	0	21	17	0.81
Cecropia longipes	12	H	1	18	13	0.72
Cecropia longipes	12	P	0	22	3	0.14
Cecropia longipes	12	P	1	18	0	0.00
Cecropia longipes	12	Z	0	25	6	0.24
Cecropia longipes	12	Z	1	15	3	0.20
Cecropia longipes	18	A	0	17	3	0.18
Cecropia longipes	18	A	1	23	4	0.17
Cecropia longipes	18	D	0	26	1	0.04
Cecropia longipes	18	D	1	14	1	0.07
Cecropia longipes	18	H	0	27	5	0.19
Cecropia longipes	18	H	1	12	2	0.17
Cecropia longipes	18	P	0	19	5	0.26
Cecropia longipes	18	P	1	21	1	0.05
Cecropia longipes	18	Z	0	33	6	0.18
Cecropia longipes	18	Z	1	7	1	0.14
Cecropia longipes	24	A	0	23	2	0.09

Cecropia longipes	24	A	1	17	1	0.06
Cecropia longipes	24	D	0	25	3	0.12
Cecropia longipes	24	D	1	15	0	0.00
Cecropia longipes	24	H	0	34	0	0.00
Cecropia longipes	24	H	1	6	0	0.00
Cecropia longipes	24	P	0	14	0	0.00
Cecropia longipes	24	P	1	24	1	0.04
Cecropia longipes	24	Z	0	28	5	0.18
Cecropia longipes	24	Z	1	12	0	0.00
Cecropia longipes	30	A	0	31	3	0.10
Cecropia longipes	30	A	1	9	0	0.00
Cecropia longipes	30	D	0	29	1	0.03
Cecropia longipes	30	D	1	11	1	0.09
Cecropia longipes	30	H	0	30	1	0.03
Cecropia longipes	30	P	0	28	4	0.14
Cecropia longipes	30	P	1	12	0	0.00
Cecropia longipes	30	Z	0	38	14	0.37
Cecropia longipes	30	Z	1	2	0	0.00
Cecropia peltata	1	A	0	14	4	0.29
Cecropia peltata	1	A	1	26	11	0.42
Cecropia peltata	1	D	0	8	5	0.62
Cecropia peltata	1	D	1	32	27	0.84
Cecropia peltata	1	H	0	4	3	0.75
Cecropia peltata	1	H	1	35	25	0.71
Cecropia peltata	1	P	0	11	6	0.55
Cecropia peltata	1	P	1	29	22	0.76
Cecropia peltata	1	Z	0	10	10	1.00
Cecropia peltata	1	Z	1	23	22	0.96
Cecropia peltata	3	A	0	8	7	0.88
Cecropia peltata	3	A	1	32	30	0.94
Cecropia peltata	3	D	0	10	4	0.40
Cecropia peltata	3	D	1	30	21	0.70
Cecropia peltata	3	H	0	6	5	0.83
Cecropia peltata	3	H	1	34	33	0.97
Cecropia peltata	3	P	0	15	15	1.00
Cecropia peltata	3	P	1	25	21	0.84
Cecropia peltata	3	Z	0	9	8	0.89
Cecropia peltata	3	Z	1	31	24	0.77
Cecropia peltata	6	A	0	11	5	0.45
Cecropia peltata	6	A	1	29	20	0.69
Cecropia peltata	6	D	0	20	9	0.45
Cecropia peltata	6	D	1	20	18	0.90
Cecropia peltata	6	H	0	15	3	0.20

Cecropia peltata	6	H	1	25	2	0.08
Cecropia peltata	6	P	0	8	5	0.62
Cecropia peltata	6	P	1	32	17	0.53
Cecropia peltata	6	Z	0	17	6	0.35
Cecropia peltata	6	Z	1	23	15	0.65
Cecropia peltata	12	A	0	24	11	0.46
Cecropia peltata	12	A	1	16	9	0.56
Cecropia peltata	12	D	0	17	4	0.24
Cecropia peltata	12	D	1	23	8	0.35
Cecropia peltata	12	H	0	30	6	0.20
Cecropia peltata	12	H	1	10	6	0.60
Cecropia peltata	12	P	0	18	8	0.44
Cecropia peltata	12	P	1	21	4	0.19
Cecropia peltata	12	Z	0	16	10	0.62
Cecropia peltata	12	Z	1	24	14	0.58
Cecropia peltata	18	A	0	29	11	0.38
Cecropia peltata	18	A	1	11	4	0.36
Cecropia peltata	18	D	0	18	3	0.17
Cecropia peltata	18	D	1	22	3	0.14
Cecropia peltata	18	H	0	38	1	0.03
Cecropia peltata	18	H	1	2	1	0.50
Cecropia peltata	18	P	0	32	5	0.16
Cecropia peltata	18	P	1	8	2	0.25
Cecropia peltata	18	Z	0	24	1	0.04
Cecropia peltata	18	Z	1	16	2	0.12
Cecropia peltata	24	A	0	19	0	0.00
Cecropia peltata	24	A	1	1	0	0.00
Cecropia peltata	24	D	0	8	3	0.38
Cecropia peltata	24	D	1	32	7	0.22
Cecropia peltata	24	H	0	39	11	0.28
Cecropia peltata	24	H	1	1	1	1.00
Cecropia peltata	24	P	0	23	0	0.00
Cecropia peltata	24	P	1	17	2	0.12
Cecropia peltata	24	Z	0	18	2	0.11
Cecropia peltata	24	Z	1	14	2	0.14
Cecropia peltata	30	A	0	15	0	0.00
Cecropia peltata	30	A	1	5	0	0.00
Cecropia peltata	30	D	0	31	1	0.03
Cecropia peltata	30	D	1	1	0	0.00
Cecropia peltata	30	H	0	30	5	0.17
Cecropia peltata	30	P	0	12	2	0.17
Cecropia peltata	30	P	1	27	4	0.15
Cecropia peltata	30	Z	0	29	7	0.24

Cecropia peltata	30	Z	1	1	1	1.00
Jacaranda copaia	1	A	0	11	3	0.27
Jacaranda copaia	1	A	1	29	8	0.28
Jacaranda copaia	1	D	0	18	3	0.17
Jacaranda copaia	1	D	1	22	6	0.27
Jacaranda copaia	1	H	0	11	5	0.45
Jacaranda copaia	1	H	1	29	14	0.48
Jacaranda copaia	1	P	0	18	5	0.28
Jacaranda copaia	1	P	1	22	8	0.36
Jacaranda copaia	1	Z	0	10	4	0.40
Jacaranda copaia	1	Z	1	30	11	0.37
Jacaranda copaia	3	A	0	14	4	0.29
Jacaranda copaia	3	A	1	26	9	0.35
Jacaranda copaia	3	D	0	20	6	0.30
Jacaranda copaia	3	D	1	20	11	0.55
Jacaranda copaia	3	H	0	16	4	0.25
Jacaranda copaia	3	H	1	24	9	0.38
Jacaranda copaia	3	P	0	16	6	0.38
Jacaranda copaia	3	P	1	24	7	0.29
Jacaranda copaia	3	Z	0	19	4	0.21
Jacaranda copaia	3	Z	1	21	8	0.38
Jacaranda copaia	6	A	0	28	4	0.14
Jacaranda copaia	6	A	1	12	2	0.17
Jacaranda copaia	6	D	0	27	3	0.11
Jacaranda copaia	6	D	1	13	0	0.00
Jacaranda copaia	6	H	0	40	12	0.30
Jacaranda copaia	6	P	0	23	7	0.30
Jacaranda copaia	6	P	1	17	6	0.35
Jacaranda copaia	6	Z	0	32	8	0.25
Jacaranda copaia	6	Z	1	8	0	0.00
Jacaranda copaia	12	A	0	20	10	0.50
Jacaranda copaia	12	A	1	9	1	0.11
Jacaranda copaia	12	D	0	24	7	0.29
Jacaranda copaia	12	D	1	6	0	0.00
Jacaranda copaia	12	H	0	28	2	0.07
Jacaranda copaia	12	H	1	3	0	0.00
Jacaranda copaia	12	P	0	23	10	0.43
Jacaranda copaia	12	P	1	10	4	0.40
Jacaranda copaia	12	Z	0	11	1	0.09
Jacaranda copaia	12	Z	1	15	4	0.27
Jacaranda copaia	18	A	0	40	12	0.30
Jacaranda copaia	18	D	0	22	1	0.05
Jacaranda copaia	18	D	1	18	1	0.06

Jacaranda copaia	18	H	0	40	7	0.18
Jacaranda copaia	18	P	0	34	6	0.18
Jacaranda copaia	18	P	1	5	2	0.40
Jacaranda copaia	18	Z	0	18	2	0.11
Jacaranda copaia	18	Z	1	21	6	0.29
Jacaranda copaia	24	A	0	13	4	0.31
Jacaranda copaia	24	A	1	7	3	0.43
Jacaranda copaia	24	D	0	30	18	0.60
Jacaranda copaia	24	D	1	10	4	0.40
Jacaranda copaia	24	H	0	40	14	0.35
Jacaranda copaia	24	P	0	40	8	0.20
Jacaranda copaia	24	Z	0	20	2	0.10
Jacaranda copaia	24	Z	1	18	4	0.22
Jacaranda copaia	30	A	0	20	1	0.05
Jacaranda copaia	30	H	0	1	0	0.00
Jacaranda copaia	30	H	1	9	3	0.33
Jacaranda copaia	30	P	0	36	21	0.58
Jacaranda copaia	30	Z	0	4	2	0.50
Jacaranda copaia	30	Z	1	5	2	0.40

Table S4. Diversity of seed-associated fungi. Fisher's alpha was calculated for each combination of plant species, burial duration, garden location, and seed viability. S represents the number of OTUs derived from N (the number of sequences), for each particular combination. For garden location see legend of Table S3.

Plant species	Burial duration	Garden location	Seed viability	N	S	Fisher's alpha
Cecropia insignis	1	A	1	3	3	-
Cecropia insignis	1	D	0	1	1	-
Cecropia insignis	1	D	1	2	2	-
Cecropia insignis	1	H	0	1	1	-
Cecropia insignis	1	H	1	5	3	3.17
Cecropia insignis	1	P	1	4	4	-
Cecropia insignis	1	Z	0	2	2	-
Cecropia insignis	1	Z	1	1	1	-
Cecropia insignis	3	D	0	2	2	-
Cecropia insignis	3	H	0	1	1	-
Cecropia insignis	3	H	1	2	2	-
Cecropia insignis	3	P	0	3	3	-
Cecropia insignis	3	P	1	6	4	5.24
Cecropia insignis	3	Z	0	2	2	-
Cecropia insignis	3	Z	1	2	1	0.8
Cecropia insignis	6	A	0	2	2	-
Cecropia insignis	6	A	1	1	1	-
Cecropia insignis	6	D	0	1	1	-
Cecropia insignis	6	D	1	6	5	14.12
Cecropia insignis	6	H	1	1	1	-
Cecropia insignis	6	Z	0	3	2	2.62
Cecropia insignis	6	Z	1	2	1	0.8
Cecropia insignis	12	A	0	1	1	-
Cecropia insignis	12	H	0	1	1	-
Cecropia insignis	12	P	0	1	1	-
Cecropia insignis	12	Z	0	8	5	5.71
Cecropia insignis	12	Z	1	2	2	-
Cecropia insignis	18	A	1	1	1	-
Cecropia insignis	18	D	0	2	2	-
Cecropia insignis	18	H	0	1	1	-
Cecropia insignis	18	Z	0	5	4	9.28
Cecropia insignis	24	A	0	3	1	0.53
Cecropia insignis	24	D	0	1	1	-
Cecropia insignis	24	D	1	1	1	-
Cecropia insignis	24	P	0	1	1	-
Cecropia insignis	24	Z	0	1	1	-

Cecropia insignis	30	A	0	2	1	0.8
Cecropia insignis	30	A	1	2	1	0.8
Cecropia insignis	30	D	0	1	1	-
Cecropia insignis	30	H	0	3	2	2.62
Cecropia insignis	30	P	0	1	1	-
Cecropia insignis	30	P	1	1	1	-
Cecropia insignis	30	Z	0	3	1	0.53
Cecropia longipes	1	A	0	14	9	10.88
Cecropia longipes	1	A	1	11	6	5.4
Cecropia longipes	1	D	0	7	4	3.88
Cecropia longipes	1	D	1	9	6	7.87
Cecropia longipes	1	H	0	10	3	1.45
Cecropia longipes	1	H	1	19	9	6.69
Cecropia longipes	1	P	0	21	8	4.72
Cecropia longipes	1	P	1	8	5	5.71
Cecropia longipes	1	Z	0	11	4	2.26
Cecropia longipes	1	Z	1	14	5	2.78
Cecropia longipes	3	A	0	11	6	5.4
Cecropia longipes	3	A	1	4	3	5.45
Cecropia longipes	3	D	0	11	6	5.4
Cecropia longipes	3	D	1	12	8	10.49
Cecropia longipes	3	H	0	5	4	9.28
Cecropia longipes	3	H	1	7	4	3.88
Cecropia longipes	3	P	0	13	4	1.97
Cecropia longipes	3	P	1	7	5	7.82
Cecropia longipes	3	Z	0	17	9	7.75
Cecropia longipes	3	Z	1	7	5	7.82
Cecropia longipes	6	A	0	4	3	5.45
Cecropia longipes	6	A	1	6	4	5.24
Cecropia longipes	6	D	0	2	2	-
Cecropia longipes	6	H	1	1	1	-
Cecropia longipes	6	P	0	1	1	-
Cecropia longipes	6	P	1	1	1	-
Cecropia longipes	6	Z	0	12	7	7.03
Cecropia longipes	6	Z	1	8	7	26.78
Cecropia longipes	12	A	0	2	2	-
Cecropia longipes	12	A	1	3	3	-
Cecropia longipes	12	D	0	2	2	-
Cecropia longipes	12	H	0	17	5	2.39
Cecropia longipes	12	H	1	12	3	1.28
Cecropia longipes	12	P	0	2	2	-
Cecropia longipes	12	Z	0	6	5	14.12
Cecropia longipes	12	Z	1	3	3	-

Cecropia longipes	18	A	0	2	2	-
Cecropia longipes	18	A	1	4	4	-
Cecropia longipes	18	D	1	1	1	-
Cecropia longipes	18	H	0	2	2	-
Cecropia longipes	18	H	1	2	1	0.8
Cecropia longipes	18	P	0	4	1	0.43
Cecropia longipes	18	P	1	1	1	-
Cecropia longipes	18	Z	0	5	2	1.24
Cecropia longipes	24	A	0	2	2	-
Cecropia longipes	24	A	1	1	1	-
Cecropia longipes	24	D	0	1	1	-
Cecropia longipes	24	P	1	1	1	-
Cecropia longipes	24	Z	0	3	2	2.62
Cecropia longipes	30	A	0	3	2	2.62
Cecropia longipes	30	D	0	1	1	-
Cecropia longipes	30	D	1	1	1	-
Cecropia longipes	30	H	0	1	1	-
Cecropia longipes	30	Z	0	3	1	0.53
Cecropia peltata	1	A	0	3	2	2.62
Cecropia peltata	1	A	1	11	3	1.36
Cecropia peltata	1	D	0	4	3	5.45
Cecropia peltata	1	D	1	23	7	3.43
Cecropia peltata	1	H	0	3	3	-
Cecropia peltata	1	H	1	23	4	1.4
Cecropia peltata	1	P	0	3	2	2.62
Cecropia peltata	1	P	1	16	4	1.71
Cecropia peltata	1	Z	0	9	4	2.76
Cecropia peltata	1	Z	1	19	5	2.21
Cecropia peltata	3	A	0	7	2	0.94
Cecropia peltata	3	A	1	30	5	1.71
Cecropia peltata	3	D	0	3	2	2.62
Cecropia peltata	3	D	1	19	2	0.56
Cecropia peltata	3	H	0	4	3	5.45
Cecropia peltata	3	H	1	28	5	1.77
Cecropia peltata	3	P	0	12	5	3.22
Cecropia peltata	3	P	1	17	3	1.06
Cecropia peltata	3	Z	0	7	4	3.88
Cecropia peltata	3	Z	1	24	4	1.37
Cecropia peltata	6	A	0	5	2	1.24
Cecropia peltata	6	A	1	20	5	2.14
Cecropia peltata	6	D	0	6	4	5.24
Cecropia peltata	6	D	1	15	6	3.71
Cecropia peltata	6	H	0	2	2	-

Cecropia peltata	6	H	1	1	1	-
Cecropia peltata	6	P	0	4	2	1.59
Cecropia peltata	6	P	1	17	4	1.65
Cecropia peltata	6	Z	0	6	3	2.39
Cecropia peltata	6	Z	1	15	3	1.13
Cecropia peltata	12	A	0	10	4	2.47
Cecropia peltata	12	A	1	9	2	0.8
Cecropia peltata	12	D	0	4	3	5.45
Cecropia peltata	12	D	1	7	4	3.88
Cecropia peltata	12	H	0	5	2	1.24
Cecropia peltata	12	H	1	5	2	1.24
Cecropia peltata	12	P	0	8	7	26.78
Cecropia peltata	12	P	1	3	3	-
Cecropia peltata	12	Z	0	10	4	2.47
Cecropia peltata	12	Z	1	14	3	1.17
Cecropia peltata	18	A	0	11	5	3.54
Cecropia peltata	18	A	1	4	2	1.59
Cecropia peltata	18	D	0	3	2	2.62
Cecropia peltata	18	D	1	3	2	2.62
Cecropia peltata	18	H	0	1	1	-
Cecropia peltata	18	H	1	1	1	-
Cecropia peltata	18	P	0	4	4	-
Cecropia peltata	18	P	1	2	1	0.8
Cecropia peltata	18	Z	0	1	1	-
Cecropia peltata	18	Z	1	2	2	-
Cecropia peltata	24	D	0	2	2	-
Cecropia peltata	24	D	1	7	4	3.88
Cecropia peltata	24	H	0	8	5	5.71
Cecropia peltata	24	H	1	1	1	-
Cecropia peltata	24	P	1	2	2	-
Cecropia peltata	24	Z	0	1	1	-
Cecropia peltata	24	Z	1	2	2	-
Cecropia peltata	30	D	0	1	1	-
Cecropia peltata	30	H	0	5	5	-
Cecropia peltata	30	P	0	2	2	-
Cecropia peltata	30	P	1	4	4	-
Cecropia peltata	30	Z	0	4	4	-
Cecropia peltata	30	Z	1	1	1	-
Jacaranda copaia	1	A	0	3	3	-
Jacaranda copaia	1	A	1	8	3	1.74
Jacaranda copaia	1	D	0	3	2	2.62
Jacaranda copaia	1	D	1	4	4	-
Jacaranda copaia	1	H	0	5	5	-

Jacaranda copaia	1	H	1	12	8	10.49
Jacaranda copaia	1	P	0	5	2	1.24
Jacaranda copaia	1	P	1	6	3	2.39
Jacaranda copaia	1	Z	0	3	3	-
Jacaranda copaia	1	Z	1	11	4	2.26
Jacaranda copaia	3	A	0	3	3	-
Jacaranda copaia	3	A	1	7	4	3.88
Jacaranda copaia	3	D	0	6	4	5.24
Jacaranda copaia	3	D	1	11	5	3.54
Jacaranda copaia	3	H	0	4	4	-
Jacaranda copaia	3	H	1	8	4	3.18
Jacaranda copaia	3	P	0	6	5	14.12
Jacaranda copaia	3	P	1	6	6	-
Jacaranda copaia	3	Z	0	2	2	-
Jacaranda copaia	3	Z	1	8	4	3.18
Jacaranda copaia	6	A	0	4	3	5.45
Jacaranda copaia	6	A	1	2	1	0.8
Jacaranda copaia	6	D	0	2	2	-
Jacaranda copaia	6	H	0	10	2	0.75
Jacaranda copaia	6	P	0	7	3	1.99
Jacaranda copaia	6	P	1	5	3	3.17
Jacaranda copaia	6	Z	0	6	6	-
Jacaranda copaia	12	A	0	10	4	2.47
Jacaranda copaia	12	A	1	1	1	-
Jacaranda copaia	12	D	0	7	5	7.82
Jacaranda copaia	12	H	0	2	1	0.8
Jacaranda copaia	12	P	0	10	6	6.33
Jacaranda copaia	12	P	1	4	4	-
Jacaranda copaia	12	Z	0	1	1	-
Jacaranda copaia	12	Z	1	4	3	5.45
Jacaranda copaia	18	A	0	12	6	4.78
Jacaranda copaia	18	D	0	1	1	-
Jacaranda copaia	18	D	1	1	1	-
Jacaranda copaia	18	H	0	7	4	3.88
Jacaranda copaia	18	P	0	6	5	14.12
Jacaranda copaia	18	P	1	2	2	-
Jacaranda copaia	18	Z	0	2	2	-
Jacaranda copaia	18	Z	1	6	3	2.39
Jacaranda copaia	24	A	0	4	2	1.59
Jacaranda copaia	24	A	1	3	2	2.62
Jacaranda copaia	24	D	0	18	12	15.73
Jacaranda copaia	24	D	1	4	4	-
Jacaranda copaia	24	H	0	12	6	4.78

Jacaranda copaia	24	P	0	8	3	1.74
Jacaranda copaia	24	Z	0	2	2	-
Jacaranda copaia	24	Z	1	4	3	5.45
Jacaranda copaia	30	A	0	1	1	-
Jacaranda copaia	30	H	1	3	3	-
Jacaranda copaia	30	P	0	18	10	9.26
Jacaranda copaia	30	Z	0	2	1	0.8
Jacaranda copaia	30	Z	1	2	2	-

Table S5. Phylogenetic diversity and results of the phylogenetic structure analysis of the seed-associated Ascomycetes. SES.MPD is the standardized effect size of mean phylogenetic distance, and SES.MNTD is the standardized effect size of the mean shortest taxonomic distance between one species and all others. Significant values are shown in bold.

Plant species	PD	No. of OTUs	SES.MPD				SES.MNTD			
			MPD Obs.	Rand. Mean	Rand. SD	Obs. P	MNTD. Obs.	Rand. Mean	Rand. SD	Obs. P
Cecropia insignis	3.1	29	0.55	0.548	0.04	0.49	0.1	0.125	0.02	0.15
Cecropia longipes	4.7	57	0.56	0.548	0.03	0.67	0.07	0.092	0.01	**0.05**
Cecropia peltata	4.5	50	0.56	0.549	0.03	0.64	0.095	0.098	0.02	0.43
Jacaranda copaia	4.7	58	0.41	0.548	0.03	**0.001**	0.088	0.092	0.01	0.39

Table S6. Partial least squares regression summary statistics including the plant species, number of components in the final model, root mean square error of prediction (RMSEP), explained variance for components 1 and 2, the total number of OTUs included for each of the plant species, and the OTUs associated with seed germination.

Plant species	Number of components	RMSEP (adjusted)	Explained variance (%)		Number of OTUs	OTUs associated to seed germination
			Component 1	Component 2		
Cecropia insignis	2	0.07	64.8	19.6	16	7, 8, 13
Cecropia longipes	2	0.03	48.9	17.9	19	7, 9, 17, 36, 38
Cecropia peltata	2	0.15	56.5	30.4	21	9
Jacaranda copaia	2	0.03	74.1	11.5	23	25, 48, 98

Table S7. Affinities among plant host species and significant OTUs identified by PLSR. The number represents the percentage of fungal isolates for each plant species by OTU combination. In parentheses, the number of isolates per OTU. Strong associations between plant host species and fungal OTUs are shown in bold.

Plant Species	OTU number							
	7	9	17	25	36	38	48	98
Cecropia insignis	8 (18)	1 (3)	3 (2)	1 (1)	0 (0)	0 (0)	0	0 (0)
Cecropia longipes	10 (24)	14 (32)	**75 (48)**	1 (1)	**100 (85)**	**92 (12)**	11 (6)	3 (1)
Cecropia peltata	**82 (193)**	**84 (197)**	3 (2)	1 (1)	0 (0)	8 (1)	25 (14)	3 (1)
Jacaranda copaia	0 (0)	1 (2)	19 (12)	**97 (102)**	0 (0)	0 (0)	**64 (36)**	**94 (36)**

Table S2. Sequence accession numbers (GenBank) and taxonomy of fungi isolated from buried seeds. Fungal isolates were obtained from four plant species (CI: *Cecropia insignis* ; CP: *C. peltata* ; CL: *C. longipes* ; JC: *Jacaranda copaia*) that were buried in five common gardens in the forest of BCI (Panama) and retrieved at 1, 3, 6, 12, 18, 24, and 30 months after burial. Operational taxonomic units (OTU) were defined at 99%, 97%, and 95% sequence similarity. Seed viability: 1=viable seeds, 0=inviable seeds.

Sequence ID	Accession number	OTU 95%	OTU 97%	OTU 95%	Plant species	Burial duration	Garden location	Seed viability	Class	Order	Genus
PS0354	KU977737	OUT 1	OUT 1	OUT 1	CI	1	A	1	Dothideomycetes	Pleosporales	*Neocucurbitaria*
PS0361	KU977739	OUT 3	OUT 3	OUT 3	CI	1	A	1	Dothideomycetes	Pleosporales	*Parathyridaria*
PS0362	KU977740	OUT 4	OUT 4	OUT 4	CI	1	A	1	Sordariomycetes	Hypocreales	*Fusarium*
PS0365	KU977741	OUT 5	OUT 5	OUT 5	CI	1	D	0	Dothideomycetes	Pleosporales	*Anteaglonium*
PS0366	KU977742	OUT 6	OUT 6	OUT 6	CI	1	D	1	Sordariomycetes	Sordariales	*Chaetomium*
PS0367	KY775802	OUT 5	OUT 5	OUT 5	CI	1	D	1	Dothideomycetes	Pleosporales	*Anteaglonium*
PS0369	KU977743	OUT 7	OUT 7	OUT 7	CI	1	H	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS0370	KU977744	OUT 7	OUT 7	OUT 7	CI	1	H	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS0371	KY775803	OUT 7	OUT 7	OUT 8	CI	1	H	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS0375	KY775805	OUT 8	OUT 8	OUT 9	CI	1	H	1	Sordariomycetes	Sordariales	*Chaetomium*
PS0380	KY775806	OUT 9	OUT 9	OUT 10	CI	1	H	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS0381	KY775807	OUT 9	OUT 9	OUT 10	CI	1	H	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS0386	KU977745	OUT 7	OUT 7	OUT 7	CI	1	P	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS0387	KU977746	OUT 10	OUT 10	OUT 11	CI	1	P	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS0388	KU977747	OUT 11	OUT 11	OUT 12	CI	1	P	1	Dothideomycetes	Pleosporales	*Alternaria*
PS0389	KY775808	OUT 2	OUT 12	OUT 13	CI	1	P	1	Sordariomycetes	Sordariales	*Chaetomium*
PS0391	KY775809	OUT 12	OUT 13	OUT 14	CI	1	Z	0	Ascomycota *incertae sedis*	Ascomycota *incertae sedis*	*Staphylotrichum*
PS0392	KU977748	OUT 7	OUT 7	OUT 7	CI	1	Z	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS0398	KY775810	OUT 10	OUT 10	OUT 11	CI	1	Z	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS0405	KY775811	OUT 13	OUT 14	OUT 15	CI	3	D	0	Dothideomycetes	Pleosporales	*Parathyridaria*
PS0411	KU977749	OUT 4	OUT 4	OUT 4	CI	3	D	0	Sordariomycetes	Hypocreales	*Fusarium*
PS0417	KU977750	OUT 8	OUT 8	OUT 9	CI	3	H	1	Sordariomycetes	Sordariales	*Chaetomium*
PS0420	KU977751	OUT 2	OUT 2	OUT 16	CI	3	H	1	Sordariomycetes	Sordariales	*Chaetomium*
PS0421	KU977752	OUT 2	OUT 12	OUT 17	CI	3	H	0	Sordariomycetes	Sordariales	*Chaetomium*
PS0426	KY775812	OUT 4	OUT 15	OUT 18	CI	3	P	0	Sordariomycetes	Hypocreales	*Fusarium*
PS0427	KU977753	OUT 14	OUT 16	OUT 19	CI	3	P	1	Sordariomycetes	Hypocreales	*Thyronectria*
PS0428	KU977754	OUT 15	OUT 17	OUT 20	CI	3	P	0	Dothideomycetes	Botryosphaeriales	*Diplodia*
PS0429	KY775813	OUT 14	OUT 16	OUT 19	CI	3	P	1	Sordariomycetes	Hypocreales	*Thyronectria*
PS0430	KU977755	OUT 2	OUT 2	OUT 2	CI	3	P	0	Sordariomycetes	Sordariales	*Chaetomium*
PS0431	KU977756	OUT 16	OUT 18	OUT 21	CI	3	P	1	Sordariomycetes	Xylariales	*Barrmaelia*
PS0432	KU977757	OUT 4	OUT 4	OUT 4	CI	3	P	1	Sordariomycetes	Hypocreales	*Fusarium*
PS0433	KU977758	OUT 8	OUT 8	OUT 22	CI	3	P	1	Sordariomycetes	Sordariales	*Chaetomium*
PS0434	KU977759	OUT 4	OUT 4	OUT 4	CI	3	P	1	Sordariomycetes	Hypocreales	*Fusarium*
PS0435	KU977760	OUT 7	OUT 7	OUT 8	CI	3	Z	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS0437	KU977761	OUT 7	OUT 7	OUT 8	CI	3	Z	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS0439	KU977762	OUT 17	OUT 19	OUT 23	CI	3	Z	0	Sordariomycetes	Hypocreales	*Calonectria*
PS0441	KU977763	OUT 7	OUT 7	OUT 7	CI	3	Z	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS0443	KU977764	OUT 18	OUT 20	OUT 24	CI	6	A	1	Sordariomycetes	Xylariales	*Anthostomelloides*
PS0447	KU977766	OUT 4	OUT 15	OUT 18	CI	6	A	0	Sordariomycetes	Hypocreales	*Fusarium*
PS0451	KU977767	OUT 19	OUT 21	OUT 25	CI	6	A	0	Sordariomycetes	Hypocreales	*Fusarium*
PS0452	KY775814	OUT 20	OUT 22	OUT 26	CI	6	D	1	Agaricomycetes	Thelephorales	*Polyozellus*
PS0453	KY775815	OUT 20	OUT 22	OUT 26	CI	6	D	1	Agaricomycetes	Thelephorales	*Polyozellus*
PS0454	KU977768	OUT 14	OUT 23	OUT 27	CI	6	D	0	Sordariomycetes	Hypocreales	*Fusarium*
PS0455	KU977769	OUT 2	OUT 2	OUT 16	CI	6	D	1	Sordariomycetes	Sordariales	*Chaetomium*
PS0456	KU977770	OUT 7	OUT 7	OUT 8	CI	6	D	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS0457	KU977771	OUT 8	OUT 8	OUT 22	CI	6	D	1	Sordariomycetes	Sordariales	*Chaetomium*
PS0458	KU977772	OUT 21	OUT 24	OUT 28	CI	6	D	1	Leotiomycetes	Helotiales	*Pilidium*

PS0459	KY775816	OUT 9	OUT 9	OUT 29	CI	6	H	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS0468	KU977773	OUT 7	OUT 7	OUT 7	CI	6	Z	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS0469	KU977774	OUT 12	OUT 13	OUT 14	CI	6	Z	0	Ascomycota *incertae sedis*	Ascomycota *incertae sedis*	*Staphylotrichum*
PS0470	KU977775	OUT 12	OUT 13	OUT 14	CI	6	Z	0	Ascomycota *incertae sedis*	Ascomycota *incertae sedis*	*Staphylotrichum*
PS0471	KU977776	OUT 7	OUT 7	OUT 7	CI	6	Z	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS0472	KU977777	OUT 7	OUT 7	OUT 7	CI	6	Z	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS1389	KY775913	OUT 22	OUT 25	OUT 30	CI	12	A	0	Sordariomycetes	Xylariales	*Xylaria*
PS1391	KY775914	OUT 23	OUT 26	OUT 31	CI	12	P	0	Sordariomycetes	Hypocreales	*Eucasphaeria*
PS1433	KY775915	OUT 8	OUT 8	OUT 9	CI	12	H	0	Sordariomycetes	Sordariales	*Chaetomium*
PS1438	KY775916	OUT 12	OUT 13	OUT 14	CI	12	Z	1	Ascomycota *incertae sedis*	Ascomycota *incertae sedis*	*Staphylotrichum*
PS1439	KY775917	OUT 2	OUT 2	OUT 16	CI	12	Z	0	Sordariomycetes	Sordariales	*Chaetomium*
PS1441	KY775918	OUT 7	OUT 7	OUT 7	CI	12	Z	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS1444	KY775919	OUT 7	OUT 7	OUT 32	CI	12	Z	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS1445	KY775920	OUT 7	OUT 7	OUT 7	CI	12	Z	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS1446	KY775921	OUT 7	OUT 7	OUT 7	CI	12	Z	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS1448	KY775922	OUT 7	OUT 7	OUT 7	CI	12	Z	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS1453	KY775923	OUT 10	OUT 10	OUT 11	CI	12	Z	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS1457	KY775924	OUT 12	OUT 13	OUT 14	CI	12	Z	0	Ascomycota *incertae sedis*	Ascomycota *incertae sedis*	*Staphylotrichum*
PS1461	KY775925	OUT 15	OUT 17	OUT 33	CI	12	Z	0	Dothideomycetes	Botryosphaeriales	*Diplodia*
PS2358	MW529103	OUT 24	OUT 27	OUT 34	CI	18	Z	0	Agaricomycetes	Polyporales	*Ceriporia*
PS2359	MW529104	OUT 4	OUT 4	OUT 4	CI	18	Z	0	Sordariomycetes	Hypocreales	*Fusarium*
PS2360	MW529105	OUT 10	OUT 10	OUT 11	CI	18	Z	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS2361	MW529106	OUT 25	OUT 28	OUT 35	CI	18	Z	0	Dothideomycetes	Botryosphaeriales	*Microdiplodia*
PS2362	MW529107	OUT 10	OUT 10	OUT 11	CI	18	Z	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS2365	MW529108	OUT 26	OUT 29	OUT 36	CI	24	Z	0	Sordariomycetes	Hypocreales	*Fusarium*
PS2366	MW529109	OUT 27	OUT 30	OUT 37	CI	24	P	0	Agaricomycetes	Thelephorales	*Polyozellus*
PS2370	MW529110	OUT 28	OUT 31	OUT 38	CI	18	H	0	Eurotiomycetes	Eurotiales	*Penicillium*
PS2371	MW529111	OUT 20	OUT 32	OUT 39	CI	24	A	0	Agaricomycetes	Polyporales	*Ceriporia*
PS2372	MW529112	OUT 20	OUT 32	OUT 39	CI	24	A	0	Agaricomycetes	Polyporales	*Ceriporia*
PS2373	MW529113	OUT 20	OUT 32	OUT 39	CI	24	A	0	Agaricomycetes	Polyporales	*Ceriporia*
PS2383	MW529114	OUT 14	OUT 23	OUT 27	CI	24	D	0	Sordariomycetes	Hypocreales	*Fusarium*
PS2385	MW529115	OUT 20	OUT 32	OUT 39	CI	24	D	1	Agaricomycetes	Polyporales	*Ceriporia*
PS2390	MW529116	OUT 29	OUT 33	OUT 40	CI	18	D	0	Sordariomycetes	Hypocreales	*Fusarium*
PS2392	MW529117	OUT 30	OUT 34	OUT 41	CI	18	D	0	Agaricomycetes	Agaricales	*Coprinellus*
PS2395	MW529118	OUT 31	OUT 35	OUT 42	CI	18	A	1	Sordariomycetes	Xylariales	*Anthostomelloides*
PS2396	MW529119	OUT 15	OUT 17	OUT 43	CL	3	P	0	Dothideomycetes	Botryosphaeriales	*Diplodia*
PS2398	MW529120	OUT 32	OUT 36	OUT 44	CL	3	P	1	Sordariomycetes	Diaporthales	*Diaporthe*
PS2399	MW529121	OUT 33	OUT 37	OUT 45	CL	3	P	1	Dothideomycetes	Botryosphaeriales	*Diplodia*
PS2400	MW529122	OUT 15	OUT 17	OUT 20	CL	3	P	0	Dothideomycetes	Botryosphaeriales	*Diplodia*
PS2401	MW529123	OUT 15	OUT 17	OUT 20	CL	3	P	0	Dothideomycetes	Botryosphaeriales	*Diplodia*
PS2402	MW529124	OUT 32	OUT 36	OUT 44	CL	3	P	0	Sordariomycetes	Diaporthales	*Diaporthe*
PS2403	MW529125	OUT 15	OUT 17	OUT 43	CL	3	P	0	Dothideomycetes	Botryosphaeriales	*Diplodia*
PS2404	MW529126	OUT 15	OUT 17	OUT 33	CL	3	P	1	Dothideomycetes	Botryosphaeriales	*Diplodia*
PS2405	MW529127	OUT 34	OUT 38	OUT 46	CL	3	P	1	Dothideomycetes	Pleosporales	*Pleospora*
PS2406	MW529128	OUT 15	OUT 17	OUT 43	CL	3	P	1	Dothideomycetes	Botryosphaeriales	*Diplodia*
PS2407	MW529129	OUT 32	OUT 36	OUT 44	CL	3	P	0	Sordariomycetes	Diaporthales	*Diaporthe*
PS2409	MW529130	OUT 35	OUT 39	OUT 47	CL	3	P	1	Sordariomycetes	Xylariales	*Leptosillia*
PS2410	MW529131	OUT 32	OUT 36	OUT 48	CL	3	P	0	Sordariomycetes	Diaporthales	*Diaporthe*
PS2411	MW529132	OUT 9	OUT 9	OUT 29	CL	3	P	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS2413	MW529133	OUT 32	OUT 36	OUT 44	CL	3	P	0	Sordariomycetes	Diaporthales	*Diaporthe*
PS2416	MW529134	OUT 15	OUT 17	OUT 43	CL	3	P	0	Dothideomycetes	Botryosphaeriales	*Diplodia*
PS2418	MW529135	OUT 33	OUT 37	OUT 45	CL	3	P	1	Dothideomycetes	Botryosphaeriales	*Diplodia*
PS2419	MW529136	OUT 15	OUT 17	OUT 43	CL	3	P	0	Dothideomycetes	Botryosphaeriales	*Diplodia*

PS2420	MW529137	OUT 36	OUT 40	OUT 49	CL	3	P	0	Dothideomycetes	Botryosphaeriales	*Diplodia*
PS2422	MW529138	OUT 32	OUT 36	OUT 48	CL	3	P	0	Sordariomycetes	Diaporthales	*Diaporthe*
PS2425	MW529139	OUT 15	OUT 17	OUT 33	CL	6	P	0	Dothideomycetes	Botryosphaeriales	*Diplodia*
PS2431	MW529140	OUT 15	OUT 17	OUT 43	CL	6	P	1	Dothideomycetes	Botryosphaeriales	*Diplodia*
PS2433	MW529141	OUT 32	OUT 36	OUT 44	CL	3	H	1	Sordariomycetes	Diaporthales	*Diaporthe*
PS2434	MW529142	OUT 32	OUT 36	OUT 44	CL	3	H	0	Sordariomycetes	Diaporthales	*Diaporthe*
PS2436	MW529143	OUT 15	OUT 17	OUT 33	CL	3	H	1	Dothideomycetes	Botryosphaeriales	*Diplodia*
PS2437	MW529144	OUT 13	OUT 14	OUT 50	CL	3	H	0	Dothideomycetes	Pleosporales	*Parathyridaria*
PS2438	MW529145	OUT 32	OUT 36	OUT 44	CL	3	H	1	Sordariomycetes	Diaporthales	*Diaporthe*
PS2439	MW529146	OUT 9	OUT 9	OUT 29	CL	3	H	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS2440	MW529147	OUT 7	OUT 7	OUT 8	CL	3	H	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS2442	MW529148	OUT 9	OUT 9	OUT 29	CL	3	H	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS2446	MW529149	OUT 9	OUT 9	OUT 29	CL	3	H	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS2448	MW529150	OUT 7	OUT 7	OUT 8	CL	3	H	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS2450	MW529151	OUT 32	OUT 36	OUT 44	CL	3	H	0	Sordariomycetes	Diaporthales	*Diaporthe*
PS2455	MW529152	OUT 15	OUT 17	OUT 43	CL	3	H	0	Dothideomycetes	Botryosphaeriales	*Diplodia*
PS2456	MW529153	OUT 32	OUT 36	OUT 44	CL	6	H	1	Sordariomycetes	Diaporthales	*Diaporthe*
PS2462	MW529154	OUT 37	OUT 41	OUT 51	CL	6	Z	0	Sordariomycetes	Diaporthales	*Diaporthe*
PS2463	MW529155	OUT 9	OUT 9	OUT 29	CL	6	Z	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS2464	MW529156	OUT 37	OUT 41	OUT 51	CL	6	Z	1	Sordariomycetes	Diaporthales	*Diaporthe*
PS2465	MW529157	OUT 14	OUT 16	OUT 52	CL	6	Z	0	Sordariomycetes	Hypocreales	*Thyronectria*
PS2466	MW529158	OUT 32	OUT 36	OUT 44	CL	6	Z	0	Sordariomycetes	Diaporthales	*Diaporthe*
PS2468	MW529159	OUT 32	OUT 36	OUT 48	CL	6	Z	0	Sordariomycetes	Diaporthales	*Diaporthe*
PS2469	MW529160	OUT 32	OUT 36	OUT 44	CL	6	Z	0	Sordariomycetes	Diaporthales	*Diaporthe*
PS2471	MW529161	OUT 32	OUT 36	OUT 48	CL	6	Z	0	Sordariomycetes	Diaporthales	*Diaporthe*
PS2472	MW529162	OUT 34	OUT 38	OUT 53	CL	6	Z	1	Dothideomycetes	Pleosporales	*Pleospora*
PS2473	MW529163	OUT 32	OUT 36	OUT 44	CL	6	Z	0	Sordariomycetes	Diaporthales	*Diaporthe*
PS2474	MW529164	OUT 38	OUT 42	OUT 54	CL	6	Z	0	Sordariomycetes	Xylariales	*Anthostomelloides*
PS2475	MW529165	OUT 37	OUT 43	OUT 55	CL	6	Z	1	Sordariomycetes	Diaporthales	*Diaporthe*
PS2476	MW529166	OUT 39	OUT 44	OUT 56	CL	6	Z	1	Sordariomycetes	Diaporthales	*Melanconium*
PS2477	MW529167	OUT 34	OUT 38	OUT 46	CL	6	Z	0	Dothideomycetes	Pleosporales	*Pleospora*
PS2479	MW529168	OUT 32	OUT 36	OUT 44	CL	6	Z	1	Sordariomycetes	Diaporthales	*Diaporthe*
PS2482	MW529169	OUT 33	OUT 37	OUT 45	CL	6	Z	1	Dothideomycetes	Botryosphaeriales	*Diplodia*
PS2483	MW529170	OUT 2	OUT 45	OUT 57	CL	6	Z	0	Sordariomycetes	Sordariales	*Chaetomium*
PS2484	MW529171	OUT 9	OUT 9	OUT 29	CL	6	Z	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS2485	MW529172	OUT 9	OUT 9	OUT 29	CL	6	Z	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS2486	MW529173	OUT 9	OUT 9	OUT 29	CL	6	Z	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS2487	MW529174	OUT 9	OUT 9	OUT 29	CL	6	A	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS2488	MW529175	OUT 32	OUT 36	OUT 44	CL	6	A	0	Sordariomycetes	Diaporthales	*Diaporthe*
PS2489	MW529176	OUT 9	OUT 9	OUT 29	CL	6	A	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS2490	MW529177	OUT 32	OUT 36	OUT 44	CL	6	A	1	Sordariomycetes	Diaporthales	*Diaporthe*
PS2491	MW529178	OUT 9	OUT 9	OUT 29	CL	6	A	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS2492	MW529179	OUT 12	OUT 13	OUT 14	CL	6	A	1	Ascomycota *incertae sedis*	Ascomycota *incertae sedis*	*Staphylotrichum*
PS2493	MW529180	OUT 40	OUT 46	OUT 58	CL	6	A	1	Sordariomycetes	Hypocreales	*Rosasphaeria*
PS2494	MW529181	OUT 32	OUT 36	OUT 44	CL	6	A	0	Sordariomycetes	Diaporthales	*Diaporthe*
PS2495	MW529182	OUT 41	OUT 47	OUT 59	CL	6	A	0	Dothideomycetes	Pleosporales	*Hobus*
PS2496	MW529183	OUT 42	OUT 48	OUT 60	CL	6	A	0	Sordariomycetes	Hypocreales	*Fusarium*
PS2497	MW529184	OUT 36	OUT 40	OUT 49	CL	6	D	0	Dothideomycetes	Botryosphaeriales	*Diplodia*
PS2498	MW529185	OUT 42	OUT 48	OUT 60	CL	6	D	0	Sordariomycetes	Hypocreales	*Fusarium*
PS2500	MW529186	OUT 43	OUT 49	OUT 61	CL	3	A	0	Eurotiomycetes	Chaetothyriales	*Cyphellophora*
PS2501	MW529187	OUT 15	OUT 17	OUT 33	CL	3	A	0	Dothideomycetes	Botryosphaeriales	*Diplodia*
PS2502	MW529188	OUT 15	OUT 17	OUT 33	CL	3	A	0	Dothideomycetes	Botryosphaeriales	*Diplodia*
PS2504	MW529189	OUT 15	OUT 17	OUT 43	CL	3	A	0	Dothideomycetes	Botryosphaeriales	*Diplodia*

PS2505	MW529190	OUT 15	OUT 17	OUT 43	CL	3	A	0	Dothideomycetes	Botryosphaeriales	*Diplodia*
PS2506	MW529191	OUT 44	OUT 50	OUT 62	CL	3	A	0	Sordariomycetes	Hypocreales	*Fusarium*
PS2507	MW529192	OUT 15	OUT 17	OUT 43	CL	3	A	1	Dothideomycetes	Botryosphaeriales	*Diplodia*
PS2508	MW529193	OUT 15	OUT 17	OUT 43	CL	3	A	1	Dothideomycetes	Botryosphaeriales	*Diplodia*
PS2509	MW529194	OUT 39	OUT 44	OUT 56	CL	3	A	0	Sordariomycetes	Diaporthales	*Melanconium*
PS2510	MW529195	OUT 41	OUT 51	OUT 63	CL	3	A	0	Dothideomycetes	Pleosporales	*Thyridaria*
PS2511	MW529196	OUT 37	OUT 41	OUT 64	CL	3	A	0	Sordariomycetes	Diaporthales	*Diaporthe*
PS2512	MW529197	OUT 45	OUT 52	OUT 65	CL	3	A	1	Sordariomycetes	Diaporthales	*Diaporthe*
PS2513	MW529198	OUT 41	OUT 51	OUT 63	CL	3	A	1	Dothideomycetes	Pleosporales	*Thyridaria*
PS2514	MW529199	OUT 15	OUT 17	OUT 43	CL	3	A	0	Dothideomycetes	Botryosphaeriales	*Diplodia*
PS2515	MW529200	OUT 37	OUT 41	OUT 64	CL	3	A	0	Sordariomycetes	Diaporthales	*Diaporthe*
PS2516	MW529201	OUT 37	OUT 41	OUT 64	CL	3	D	0	Sordariomycetes	Diaporthales	*Diaporthe*
PS2517	MW529202	OUT 37	OUT 41	OUT 64	CL	3	D	1	Sordariomycetes	Diaporthales	*Diaporthe*
PS2518	MW529203	OUT 46	OUT 53	OUT 66	CL	3	D	1	Sordariomycetes	Sordariales	*Acrophialophora*
PS2520	MW529204	OUT 47	OUT 54	OUT 67	CL	3	D	1	Sordariomycetes	Sordariales	*Podospora*
PS2522	MW529205	OUT 48	OUT 55	OUT 68	CL	3	D	0	Oomycetes	Pythiales	*Pythium*
PS2523	MW529206	OUT 32	OUT 36	OUT 44	CL	3	D	0	Sordariomycetes	Diaporthales	*Diaporthe*
PS2524	MW529207	OUT 48	OUT 55	OUT 68	CL	3	D	0	Oomycetes	Pythiales	*Pythium*
PS2525	MW529208	OUT 34	OUT 38	OUT 53	CL	3	D	1	Dothideomycetes	Pleosporales	*Pleospora*
PS2526	MW529209	OUT 34	OUT 38	OUT 53	CL	3	D	1	Dothideomycetes	Pleosporales	*Pleospora*
PS2527	MW529210	OUT 34	OUT 38	OUT 53	CL	3	D	0	Dothideomycetes	Pleosporales	*Pleospora*
PS2529	MW529211	OUT 34	OUT 38	OUT 53	CL	3	D	1	Dothideomycetes	Pleosporales	*Pleospora*
PS2530	MW529212	OUT 34	OUT 38	OUT 53	CL	3	D	1	Dothideomycetes	Pleosporales	*Pleospora*
PS2531	MW529213	OUT 34	OUT 38	OUT 53	CL	3	D	1	Dothideomycetes	Pleosporales	*Pleospora*
PS2532	MW529214	OUT 15	OUT 17	OUT 33	CL	3	D	0	Dothideomycetes	Botryosphaeriales	*Diplodia*
PS2534	MW529215	OUT 48	OUT 55	OUT 68	CL	3	D	0	Oomycetes	Pythiales	*Pythium*
PS2535	MW529216	OUT 15	OUT 17	OUT 33	CL	3	D	0	Dothideomycetes	Botryosphaeriales	*Diplodia*
PS2537	MW529217	OUT 37	OUT 43	OUT 55	CL	3	D	1	Sordariomycetes	Diaporthales	*Diaporthe*
PS2538	MW529218	OUT 49	OUT 56	OUT 69	CL	3	D	0	Sordariomycetes	Sordariomycetes *incertae sedis*	*Arthropsis*
PS2539	MW529219	OUT 37	OUT 41	OUT 64	CL	3	D	0	Sordariomycetes	Diaporthales	*Diaporthe*
PS2540	MW529220	OUT 29	OUT 33	OUT 40	CL	3	D	1	Sordariomycetes	Hypocreales	*Fusarium*
PS2541	MW529221	OUT 49	OUT 56	OUT 69	CL	3	D	0	Sordariomycetes	Sordariomycetes *incertae sedis*	*Arthropsis*
PS2542	MW529222	OUT 15	OUT 17	OUT 33	CL	3	D	1	Dothideomycetes	Botryosphaeriales	*Diplodia*
PS2543	MW529223	OUT 50	OUT 57	OUT 70	CL	3	D	1	Dothideomycetes	Cladosporiales	*Cladosporium*
PS2544	MW529224	OUT 32	OUT 36	OUT 71	CL	3	Z	1	Sordariomycetes	Diaporthales	*Diaporthe*
PS2545	MW529225	OUT 32	OUT 36	OUT 44	CL	3	Z	1	Sordariomycetes	Diaporthales	*Diaporthe*
PS2546	MW529226	OUT 32	OUT 36	OUT 44	CL	3	Z	0	Sordariomycetes	Diaporthales	*Diaporthe*
PS2547	MW529227	OUT 32	OUT 36	OUT 44	CL	3	Z	0	Sordariomycetes	Diaporthales	*Diaporthe*
PS2548	MW529228	OUT 2	OUT 45	OUT 57	CL	3	Z	0	Sordariomycetes	Sordariales	*Chaetomium*
PS2549	MW529229	OUT 7	OUT 7	OUT 8	CL	3	Z	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS2550	MW529230	OUT 32	OUT 36	OUT 44	CL	3	Z	0	Sordariomycetes	Diaporthales	*Diaporthe*
PS2551	MW529231	OUT 51	OUT 58	OUT 72	CL	3	Z	0	Sordariomycetes	Diaporthales	*Diaporthe*
PS2552	MW529232	OUT 32	OUT 36	OUT 44	CL	3	Z	0	Sordariomycetes	Diaporthales	*Diaporthe*
PS2553	MW529233	OUT 6	OUT 6	OUT 6	CL	3	Z	0	Sordariomycetes	Sordariales	*Chaetomium*
PS2554	MW529234	OUT 32	OUT 36	OUT 44	CL	3	Z	0	Sordariomycetes	Diaporthales	*Diaporthe*
PS2555	MW529235	OUT 32	OUT 36	OUT 44	CL	3	Z	0	Sordariomycetes	Diaporthales	*Diaporthe*
PS2556	MW529236	OUT 6	OUT 6	OUT 6	CL	3	Z	1	Sordariomycetes	Sordariales	*Chaetomium*
PS2558	MW529237	OUT 37	OUT 41	OUT 64	CL	3	Z	0	Sordariomycetes	Diaporthales	*Diaporthe*
PS2560	MW529238	OUT 32	OUT 36	OUT 44	CL	3	Z	0	Sordariomycetes	Diaporthales	*Diaporthe*
PS2561	MW529239	OUT 32	OUT 36	OUT 44	CL	3	Z	1	Sordariomycetes	Diaporthales	*Diaporthe*
PS2562	MW529240	OUT 42	OUT 48	OUT 73	CL	3	Z	0	Sordariomycetes	Hypocreales	*Fusarium*
PS2563	MW529241	OUT 52	OUT 59	OUT 74	CL	3	Z	1	Sordariomycetes	Sordariales	*Podospora*
PS2567	MW529242	OUT 32	OUT 36	OUT 44	CL	3	Z	0	Sordariomycetes	Diaporthales	*Diaporthe*

PS2568	MW529243	OUT 36	OUT 40	OUT 49	CL	3	Z	0	Dothideomycetes	Botryosphaeriales	*Diplodia*
PS2571	MW529244	OUT 32	OUT 36	OUT 44	CL	3	Z	0	Sordariomycetes	Diaporthales	*Diaporthe*
PS2572	MW529245	OUT 15	OUT 17	OUT 43	CL	3	Z	1	Dothideomycetes	Botryosphaeriales	*Diplodia*
PS2574	MW529246	OUT 15	OUT 17	OUT 43	CL	3	Z	0	Dothideomycetes	Botryosphaeriales	*Diplodia*
PS2576	MW529247	OUT 7	OUT 7	OUT 8	CL	3	Z	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS2858	MW529255	OUT 15	OUT 17	OUT 43	CL	1	A	1	Dothideomycetes	Botryosphaeriales	*Diplodia*
PS2860	MW529256	OUT 54	OUT 62	OUT 77	CL	1	A	1	Sordariomycetes	Hypocreales	*Fusarium*
PS2861	MW529257	OUT 55	OUT 63	OUT 78	CL	1	A	0	Dothideomycetes	Venturiales	*Ochroconis*
PS2862	MW529258	OUT 50	OUT 61	OUT 76	CL	1	A	0	Dothideomycetes	Cladosporiales	*Cladosporium*
PS2863	MW529259	OUT 32	OUT 36	OUT 44	CL	1	A	1	Sordariomycetes	Diaporthales	*Diaporthe*
PS2864	MW529260	OUT 44	OUT 50	OUT 79	CL	1	A	0	Sordariomycetes	Hypocreales	*Fusarium*
PS2865	MW529261	OUT 44	OUT 50	OUT 79	CL	1	A	0	Sordariomycetes	Hypocreales	*Fusarium*
PS2866	MW529262	OUT 37	OUT 41	OUT 64	CL	1	A	1	Sordariomycetes	Diaporthales	*Diaporthe*
PS2867	MW529263	OUT 56	OUT 64	OUT 80	CL	1	A	1	Sordariomycetes	Diaporthales	*Diaporthe*
PS2868	MW529264	OUT 39	OUT 44	OUT 56	CL	1	A	1	Sordariomycetes	Diaporthales	*Melanconium*
PS2869	MW529265	OUT 39	OUT 44	OUT 56	CL	1	A	1	Sordariomycetes	Diaporthales	*Melanconium*
PS2871	MW529266	OUT 37	OUT 41	OUT 51	CL	1	A	0	Sordariomycetes	Diaporthales	*Diaporthe*
PS2872	MW529267	OUT 7	OUT 7	OUT 8	CL	1	A	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS2874	MW529268	OUT 37	OUT 41	OUT 64	CL	1	A	0	Sordariomycetes	Diaporthales	*Diaporthe*
PS2875	MW529269	OUT 32	OUT 36	OUT 44	CL	1	A	0	Sordariomycetes	Diaporthales	*Diaporthe*
PS2876	MW529270	OUT 32	OUT 36	OUT 44	CL	1	A	1	Sordariomycetes	Diaporthales	*Diaporthe*
PS2877	MW529271	OUT 37	OUT 41	OUT 64	CL	1	A	0	Sordariomycetes	Diaporthales	*Diaporthe*
PS2878	MW529272	OUT 32	OUT 36	OUT 44	CL	1	A	0	Sordariomycetes	Diaporthales	*Diaporthe*
PS2879	MW529273	OUT 39	OUT 44	OUT 56	CL	1	A	1	Sordariomycetes	Diaporthales	*Melanconium*
PS2880	MW529274	OUT 15	OUT 17	OUT 43	CL	1	A	1	Dothideomycetes	Botryosphaeriales	*Diplodia*
PS2881	MW529275	OUT 39	OUT 44	OUT 56	CL	1	A	0	Sordariomycetes	Diaporthales	*Melanconium*
PS2882	MW529276	OUT 29	OUT 33	OUT 40	CL	1	A	0	Sordariomycetes	Hypocreales	*Fusarium*
PS2883	MW529277	OUT 29	OUT 33	OUT 40	CL	1	A	0	Sordariomycetes	Hypocreales	*Fusarium*
PS2885	MW529278	OUT 15	OUT 17	OUT 20	CL	1	A	0	Dothideomycetes	Botryosphaeriales	*Diplodia*
PS2886	MW529279	OUT 15	OUT 17	OUT 33	CL	1	A	1	Dothideomycetes	Botryosphaeriales	*Diplodia*
PS2887	MW529280	OUT 32	OUT 36	OUT 44	CL	1	D	0	Sordariomycetes	Diaporthales	*Diaporthe*
PS2888	MW529281	OUT 15	OUT 17	OUT 43	CL	1	D	1	Dothideomycetes	Botryosphaeriales	*Diplodia*
PS2889	MW529282	OUT 57	OUT 65	OUT 81	CL	1	D	1	Dothideomycetes	Tubeufiales	*Helicoma*
PS2890	MW529283	OUT 32	OUT 36	OUT 71	CL	1	D	0	Sordariomycetes	Diaporthales	*Diaporthe*
PS2891	MW529284	OUT 34	OUT 38	OUT 82	CL	1	D	1	Dothideomycetes	Pleosporales	*Pleospora*
PS2892	MW529285	OUT 36	OUT 40	OUT 49	CL	1	D	0	Dothideomycetes	Botryosphaeriales	*Diplodia*
PS2893	MW529286	OUT 34	OUT 38	OUT 82	CL	1	D	0	Dothideomycetes	Pleosporales	*Pleospora*
PS2894	MW529287	OUT 15	OUT 17	OUT 33	CL	1	D	1	Dothideomycetes	Botryosphaeriales	*Diplodia*
PS2895	MW529288	OUT 34	OUT 38	OUT 82	CL	1	D	1	Dothideomycetes	Pleosporales	*Pleospora*
PS2896	MW529289	OUT 32	OUT 36	OUT 44	CL	1	D	1	Sordariomycetes	Diaporthales	*Diaporthe*
PS2897	MW529290	OUT 39	OUT 44	OUT 56	CL	1	D	1	Sordariomycetes	Diaporthales	*Melanconium*
PS2898	MW529291	OUT 39	OUT 44	OUT 56	CL	1	D	1	Sordariomycetes	Diaporthales	*Melanconium*
PS2899	MW529292	OUT 39	OUT 44	OUT 56	CL	1	D	0	Sordariomycetes	Diaporthales	*Melanconium*
PS2900	MW529293	OUT 58	OUT 66	OUT 83	CL	1	D	1	Dothideomycetes	Pleosporales	*Corynespora*
PS2902	MW529294	OUT 32	OUT 36	OUT 44	CL	1	D	0	Sordariomycetes	Diaporthales	*Diaporthe*
PS2903	MW529295	OUT 39	OUT 44	OUT 56	CL	1	D	0	Sordariomycetes	Diaporthales	*Melanconium*
PS2904	MW529296	OUT 32	OUT 36	OUT 71	CL	1	H	0	Sordariomycetes	Diaporthales	*Diaporthe*
PS2905	MW529297	OUT 15	OUT 17	OUT 43	CL	1	H	1	Dothideomycetes	Botryosphaeriales	*Diplodia*
PS2906	MW529298	OUT 15	OUT 17	OUT 43	CL	1	H	1	Dothideomycetes	Botryosphaeriales	*Diplodia*
PS2907	MW529299	OUT 32	OUT 36	OUT 44	CL	1	H	0	Sordariomycetes	Diaporthales	*Diaporthe*
PS2910	MW529300	OUT 9	OUT 9	OUT 29	CL	1	H	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS2911	MW529301	OUT 15	OUT 17	OUT 43	CL	1	H	0	Dothideomycetes	Botryosphaeriales	*Diplodia*
PS2913	MW529302	OUT 15	OUT 17	OUT 43	CL	1	H	1	Dothideomycetes	Botryosphaeriales	*Diplodia*

PS2914	MW529303	OUT 32	OUT 36	OUT 44	CL	1	H	0	Sordariomycetes	Diaporthales	*Diaporthe*
PS2915	MW529304	OUT 32	OUT 36	OUT 44	CL	1	H	0	Sordariomycetes	Diaporthales	*Diaporthe*
PS2916	MW529305	OUT 12	OUT 13	OUT 14	CL	1	H	1	Ascomycota *incertae sedis*	Ascomycota *incertae sedis*	*Staphylotrichum*
PS2917	MW529306	OUT 32	OUT 36	OUT 48	CL	1	H	1	Sordariomycetes	Diaporthales	*Diaporthe*
PS2918	MW529307	OUT 32	OUT 36	OUT 48	CL	1	H	0	Sordariomycetes	Diaporthales	*Diaporthe*
PS2919	MW529308	OUT 51	OUT 58	OUT 72	CL	1	H	1	Sordariomycetes	Diaporthales	*Diaporthe*
PS2920	MW529309	OUT 59	OUT 67	OUT 84	CL	1	H	1	Dothideomycetes	Pleosporales	*Curvularia*
PS2921	MW529310	OUT 32	OUT 36	OUT 44	CL	1	H	1	Sordariomycetes	Diaporthales	*Diaporthe*
PS2922	MW529311	OUT 32	OUT 36	OUT 44	CL	1	H	0	Sordariomycetes	Diaporthales	*Diaporthe*
PS2924	MW529312	OUT 58	OUT 66	OUT 83	CL	1	H	1	Dothideomycetes	Pleosporales	*Corynespora*
PS2925	MW529313	OUT 36	OUT 40	OUT 49	CL	1	H	0	Dothideomycetes	Botryosphaeriales	*Diplodia*
PS2926	MW529314	OUT 7	OUT 7	OUT 8	CL	1	H	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS2927	MW529315	OUT 9	OUT 9	OUT 29	CL	1	H	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS2928	MW529316	OUT 9	OUT 9	OUT 29	CL	1	H	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS2929	MW529317	OUT 9	OUT 9	OUT 29	CL	1	H	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS2930	MW529318	OUT 32	OUT 36	OUT 44	CL	1	H	0	Sordariomycetes	Diaporthales	*Diaporthe*
PS2931	MW529319	OUT 60	OUT 68	OUT 85	CL	1	H	1	Sordariomycetes	Diaporthales	*Diaporthe*
PS2932	MW529320	OUT 9	OUT 9	OUT 29	CL	1	H	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS2934	MW529321	OUT 32	OUT 36	OUT 44	CL	1	H	1	Sordariomycetes	Diaporthales	*Diaporthe*
PS2936	MW529322	OUT 9	OUT 9	OUT 29	CL	1	H	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS2937	MW529323	OUT 9	OUT 9	OUT 29	CL	1	H	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS2939	MW529324	OUT 32	OUT 36	OUT 44	CL	1	H	0	Sordariomycetes	Diaporthales	*Diaporthe*
PS2940	MW529325	OUT 15	OUT 17	OUT 43	CL	1	P	0	Dothideomycetes	Botryosphaeriales	*Diplodia*
PS2941	MW529326	OUT 15	OUT 17	OUT 43	CL	1	P	1	Dothideomycetes	Botryosphaeriales	*Diplodia*
PS2942	MW529327	OUT 15	OUT 17	OUT 33	CL	1	P	1	Dothideomycetes	Botryosphaeriales	*Diplodia*
PS2944	MW529328	OUT 15	OUT 17	OUT 43	CL	1	P	0	Dothideomycetes	Botryosphaeriales	*Diplodia*
PS2945	MW529329	OUT 15	OUT 17	OUT 33	CL	1	P	1	Dothideomycetes	Botryosphaeriales	*Diplodia*
PS2946	MW529330	OUT 15	OUT 17	OUT 33	CL	1	P	0	Dothideomycetes	Botryosphaeriales	*Diplodia*
PS2947	MW529331	OUT 42	OUT 48	OUT 60	CL	1	P	0	Sordariomycetes	Hypocreales	*Fusarium*
PS2948	MW529332	OUT 32	OUT 36	OUT 44	CL	1	P	0	Sordariomycetes	Diaporthales	*Diaporthe*
PS2949	MW529333	OUT 32	OUT 36	OUT 44	CL	1	P	0	Sordariomycetes	Diaporthales	*Diaporthe*
PS2950	MW529334	OUT 32	OUT 36	OUT 44	CL	1	P	1	Sordariomycetes	Diaporthales	*Diaporthe*
PS2951	MW529335	OUT 32	OUT 36	OUT 44	CL	1	P	0	Sordariomycetes	Diaporthales	*Diaporthe*
PS2952	MW529336	OUT 32	OUT 36	OUT 44	CL	1	P	1	Sordariomycetes	Diaporthales	*Diaporthe*
PS2953	MW529337	OUT 37	OUT 41	OUT 64	CL	1	P	1	Sordariomycetes	Diaporthales	*Diaporthe*
PS2954	MW529338	OUT 32	OUT 36	OUT 44	CL	1	P	0	Sordariomycetes	Diaporthales	*Diaporthe*
PS2955	MW529339	OUT 32	OUT 36	OUT 44	CL	1	P	0	Sordariomycetes	Diaporthales	*Diaporthe*
PS2956	MW529340	OUT 37	OUT 41	OUT 64	CL	1	P	0	Sordariomycetes	Diaporthales	*Diaporthe*
PS2957	MW529341	OUT 60	OUT 68	OUT 85	CL	1	P	0	Sordariomycetes	Diaporthales	*Diaporthe*
PS2958	MW529342	OUT 58	OUT 66	OUT 83	CL	1	P	1	Dothideomycetes	Pleosporales	*Corynespora*
PS2959	MW529343	OUT 61	OUT 69	OUT 86	CL	1	P	0	Dothideomycetes	Pleosporales	*Helminthosporium*
PS2960	MW529344	OUT 32	OUT 36	OUT 44	CL	1	P	0	Sordariomycetes	Diaporthales	*Diaporthe*
PS2961	MW529345	OUT 37	OUT 41	OUT 64	CL	1	P	0	Sordariomycetes	Diaporthales	*Diaporthe*
PS2962	MW529346	OUT 32	OUT 36	OUT 44	CL	1	P	0	Sordariomycetes	Diaporthales	*Diaporthe*
PS2964	MW529347	OUT 62	OUT 70	OUT 87	CL	1	P	0	Sordariomycetes	Sordariales	*Chaetomium*
PS2965	MW529348	OUT 32	OUT 36	OUT 44	CL	1	P	0	Sordariomycetes	Diaporthales	*Diaporthe*
PS2967	MW529349	OUT 15	OUT 17	OUT 43	CL	1	P	0	Dothideomycetes	Botryosphaeriales	*Diplodia*
PS2969	MW529350	OUT 32	OUT 36	OUT 44	CL	1	P	0	Sordariomycetes	Diaporthales	*Diaporthe*
PS2970	MW529351	OUT 60	OUT 71	OUT 88	CL	1	P	1	Sordariomycetes	Diaporthales	*Diaporthe*
PS2971	MW529352	OUT 15	OUT 17	OUT 43	CL	1	P	0	Dothideomycetes	Botryosphaeriales	*Diplodia*
PS2972	MW529353	OUT 51	OUT 58	OUT 72	CL	1	P	0	Sordariomycetes	Diaporthales	*Diaporthe*
PS2973	MW529354	OUT 32	OUT 36	OUT 48	CL	1	Z	1	Sordariomycetes	Diaporthales	*Diaporthe*
PS2974	MW529355	OUT 32	OUT 36	OUT 44	CL	1	Z	0	Sordariomycetes	Diaporthales	*Diaporthe*

PS2975	MW529356	OUT 32	OUT 36	OUT 44	CL	1	Z	1	Sordariomycetes	Diaporthales	*Diaporthe*
PS2977	MW529357	OUT 63	OUT 72	OUT 89	CL	1	Z	1	Dothideomycetes	Pleosporales	*Curvularia*
PS2978	MW529358	OUT 42	OUT 48	OUT 60	CL	1	Z	0	Sordariomycetes	Hypocreales	*Fusarium*
PS2979	MW529359	OUT 32	OUT 36	OUT 44	CL	1	Z	0	Sordariomycetes	Diaporthales	*Diaporthe*
PS2980	MW529360	OUT 32	OUT 36	OUT 44	CL	1	Z	0	Sordariomycetes	Diaporthales	*Diaporthe*
PS2981	MW529361	OUT 9	OUT 9	OUT 29	CL	1	Z	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS2982	MW529362	OUT 6	OUT 6	OUT 6	CL	1	Z	1	Sordariomycetes	Sordariales	*Chaetomium*
PS2983	MW529363	OUT 32	OUT 36	OUT 44	CL	1	Z	1	Sordariomycetes	Diaporthales	*Diaporthe*
PS2984	MW529364	OUT 64	OUT 73	OUT 90	CL	1	Z	0	Saccharomycetes	Saccharomycetales	*Geotrichum*
PS2985	MW529365	OUT 6	OUT 6	OUT 6	CL	1	Z	1	Sordariomycetes	Sordariales	*Chaetomium*
PS2986	MW529366	OUT 15	OUT 17	OUT 43	CL	1	Z	1	Dothideomycetes	Botryosphaeriales	*Diplodia*
PS2987	MW529367	OUT 15	OUT 17	OUT 43	CL	1	Z	1	Dothideomycetes	Botryosphaeriales	*Diplodia*
PS2988	MW529368	OUT 32	OUT 36	OUT 44	CL	1	Z	0	Sordariomycetes	Diaporthales	*Diaporthe*
PS2989	MW529369	OUT 32	OUT 36	OUT 44	CL	1	Z	1	Sordariomycetes	Diaporthales	*Diaporthe*
PS2991	MW529370	OUT 32	OUT 36	OUT 44	CL	1	Z	1	Sordariomycetes	Diaporthales	*Diaporthe*
PS2993	MW529371	OUT 32	OUT 36	OUT 44	CL	1	Z	1	Sordariomycetes	Diaporthales	*Diaporthe*
PS2994	MW529372	OUT 32	OUT 36	OUT 44	CL	1	Z	0	Sordariomycetes	Diaporthales	*Diaporthe*
PS2995	MW529373	OUT 15	OUT 17	OUT 33	CL	1	Z	1	Dothideomycetes	Botryosphaeriales	*Diplodia*
PS2996	MW529374	OUT 32	OUT 36	OUT 48	CL	1	Z	1	Sordariomycetes	Diaporthales	*Diaporthe*
PS2997	MW529375	OUT 32	OUT 36	OUT 44	CL	1	Z	0	Sordariomycetes	Diaporthales	*Diaporthe*
PS2998	MW529376	OUT 9	OUT 9	OUT 29	CL	1	Z	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS2999	MW529377	OUT 32	OUT 36	OUT 44	CL	1	Z	0	Sordariomycetes	Diaporthales	*Diaporthe*
PS3000	MW529378	OUT 32	OUT 36	OUT 48	CL	1	Z	0	Sordariomycetes	Diaporthales	*Diaporthe*
PS4293	MW529379	OUT 9	OUT 9	OUT 10	CP	1	A	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS4294	MW529380	OUT 9	OUT 9	OUT 91	CP	1	A	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4295	MW529381	OUT 9	OUT 74	OUT 92	CP	1	A	1	Sordariomycetes	Hypocreales	*Hypocrea*
PS4296	MW529382	OUT 9	OUT 9	OUT 10	CP	1	A	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4297	MW529383	OUT 9	OUT 9	OUT 10	CP	1	A	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4298	MW529384	OUT 9	OUT 9	OUT 91	CP	1	A	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4299	MW529385	OUT 9	OUT 9	OUT 10	CP	1	A	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4301	MW529386	OUT 9	OUT 9	OUT 91	CP	1	A	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4302	MW529387	OUT 7	OUT 7	OUT 8	CP	1	A	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4303	MW529388	OUT 7	OUT 7	OUT 8	CP	1	A	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4305	MW529389	OUT 9	OUT 9	OUT 10	CP	1	A	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4306	MW529390	OUT 9	OUT 9	OUT 10	CP	1	A	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4307	MW529391	OUT 10	OUT 75	OUT 93	CP	1	A	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS4308	MW529392	OUT 9	OUT 9	OUT 10	CP	1	A	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS4309	MW529393	OUT 7	OUT 7	OUT 8	CP	3	A	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4310	MW529394	OUT 9	OUT 77	OUT 95	CP	3	A	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4311	MW529395	OUT 7	OUT 7	OUT 8	CP	3	A	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4312	MW529396	OUT 7	OUT 7	OUT 8	CP	3	A	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4313	MW529397	OUT 7	OUT 7	OUT 8	CP	3	A	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4314	MW529398	OUT 9	OUT 9	OUT 10	CP	3	A	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4315	MW529399	OUT 7	OUT 7	OUT 8	CP	3	A	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4316	MW529400	OUT 9	OUT 9	OUT 10	CP	3	A	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4317	MW529401	OUT 7	OUT 7	OUT 8	CP	3	A	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4318	MW529402	OUT 7	OUT 7	OUT 8	CP	3	A	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4319	MW529403	OUT 7	OUT 7	OUT 8	CP	3	A	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4320	MW529404	OUT 7	OUT 7	OUT 96	CP	3	A	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4321	MW529405	OUT 7	OUT 7	OUT 8	CP	3	A	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4322	MW529406	OUT 7	OUT 7	OUT 97	CP	3	A	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS4323	MW529407	OUT 7	OUT 7	OUT 8	CP	3	A	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4324	MW529408	OUT 7	OUT 7	OUT 8	CP	3	A	0	Sordariomycetes	Hypocreales	*Trichoderma*

PS4325	MW529409	OUT 7	OUT 78	OUT 98	CP	3	A	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4326	MW529410	OUT 7	OUT 7	OUT 8	CP	3	A	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4327	MW529411	OUT 7	OUT 7	OUT 8	CP	3	A	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4328	MW529412	OUT 9	OUT 9	OUT 10	CP	3	A	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4329	MW529413	OUT 7	OUT 7	OUT 8	CP	3	A	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4330	MW529414	OUT 9	OUT 9	OUT 10	CP	3	A	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4331	MW529415	OUT 9	OUT 9	OUT 10	CP	3	A	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS4332	MW529416	OUT 9	OUT 9	OUT 10	CP	3	A	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4333	MW529417	OUT 9	OUT 9	OUT 10	CP	3	A	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4334	MW529418	OUT 7	OUT 7	OUT 8	CP	3	A	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4335	MW529419	OUT 9	OUT 9	OUT 10	CP	3	A	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS4336	MW529420	OUT 9	OUT 9	OUT 10	CP	3	A	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS4337	MW529421	OUT 9	OUT 9	OUT 91	CP	3	A	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4338	MW529422	OUT 9	OUT 9	OUT 91	CP	3	A	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4339	MW529423	OUT 7	OUT 7	OUT 8	CP	3	A	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4340	MW529424	OUT 9	OUT 9	OUT 10	CP	3	A	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4341	MW529425	OUT 9	OUT 9	OUT 91	CP	3	A	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS4342	MW529426	OUT 9	OUT 9	OUT 91	CP	3	A	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4343	MW529427	OUT 9	OUT 9	OUT 91	CP	3	A	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS4344	MW529428	OUT 2	OUT 12	OUT 17	CP	3	A	1	Sordariomycetes	Sordariales	*Chaetomium*
PS4345	MW529429	OUT 9	OUT 9	OUT 91	CP	3	A	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4346	MW529430	OUT 9	OUT 9	OUT 10	CP	1	D	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4347	MW529431	OUT 9	OUT 9	OUT 10	CP	1	D	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4349	MW529432	OUT 9	OUT 9	OUT 10	CP	1	D	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4350	MW529433	OUT 9	OUT 9	OUT 10	CP	1	D	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4351	MW529434	OUT 9	OUT 9	OUT 91	CP	1	D	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4353	MW529435	OUT 7	OUT 7	OUT 8	CP	1	D	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4354	MW529436	OUT 9	OUT 9	OUT 10	CP	1	D	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS4355	MW529437	OUT 7	OUT 7	OUT 8	CP	1	D	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4356	MW529438	OUT 7	OUT 7	OUT 99	CP	1	D	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4357	MW529439	OUT 9	OUT 9	OUT 100	CP	1	D	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4358	MW529440	OUT 9	OUT 9	OUT 10	CP	1	D	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4359	MW529441	OUT 66	OUT 79	OUT 101	CP	1	D	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4360	MW529442	OUT 9	OUT 9	OUT 91	CP	1	D	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS4362	MW529443	OUT 9	OUT 9	OUT 10	CP	1	D	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4363	MW529444	OUT 67	OUT 80	OUT 102	CP	1	D	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4364	MW529445	OUT 42	OUT 48	OUT 73	CP	1	D	0	Sordariomycetes	Hypocreales	*Fusarium*
PS4365	MW529446	OUT 9	OUT 9	OUT 103	CP	1	D	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4366	MW529447	OUT 9	OUT 9	OUT 10	CP	1	D	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4368	MW529448	OUT 68	OUT 81	OUT 104	CP	1	D	0	Sordariomycetes	Hypocreales	*Thyronectria*
PS4370	MW529449	OUT 9	OUT 77	OUT 105	CP	1	D	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4371	MW529450	OUT 7	OUT 7	OUT 99	CP	1	D	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4372	MW529451	OUT 9	OUT 9	OUT 10	CP	1	D	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4373	MW529452	OUT 9	OUT 9	OUT 10	CP	1	D	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4374	MW529453	OUT 69	OUT 82	OUT 106	CP	1	D	1	Sordariomycetes	Hypocreales	*Hypocrea*
PS4375	MW529454	OUT 9	OUT 9	OUT 29	CP	1	D	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4376	MW529455	OUT 70	OUT 83	OUT 107	CP	1	D	1	Sordariomycetes	Hypocreales	*Fusarium*
PS4377	MW529456	OUT 9	OUT 9	OUT 29	CP	1	D	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4379	MW529457	OUT 7	OUT 7	OUT 8	CP	3	D	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4380	MW529458	OUT 7	OUT 7	OUT 8	CP	3	D	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4381	MW529459	OUT 9	OUT 9	OUT 10	CP	3	D	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4382	MW529460	OUT 7	OUT 7	OUT 97	CP	3	D	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4383	MW529461	OUT 7	OUT 7	OUT 8	CP	3	D	0	Sordariomycetes	Hypocreales	*Trichoderma*

PS4384	MW529462	OUT 7	OUT 7	OUT 8	CP	3	D	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4385	MW529463	OUT 9	OUT 9	OUT 10	CP	3	D	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS4386	MW529464	OUT 7	OUT 7	OUT 8	CP	3	D	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4388	MW529465	OUT 7	OUT 7	OUT 108	CP	3	D	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4389	MW529466	OUT 7	OUT 7	OUT 8	CP	3	D	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4390	MW529467	OUT 9	OUT 9	OUT 10	CP	3	D	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4391	MW529468	OUT 7	OUT 7	OUT 109	CP	3	D	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4392	MW529469	OUT 7	OUT 7	OUT 110	CP	3	D	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4393	MW529470	OUT 7	OUT 7	OUT 8	CP	3	D	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4394	MW529471	OUT 7	OUT 7	OUT 8	CP	3	D	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS4395	MW529472	OUT 7	OUT 7	OUT 8	CP	3	D	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4396	MW529473	OUT 9	OUT 9	OUT 91	CP	3	D	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4397	MW529474	OUT 7	OUT 7	OUT 111	CP	3	D	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4398	MW529475	OUT 7	OUT 7	OUT 8	CP	3	D	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4400	MW529476	OUT 7	OUT 7	OUT 7	CP	3	D	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4401	MW529477	OUT 9	OUT 9	OUT 10	CP	3	D	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4402	MW529478	OUT 7	OUT 7	OUT 8	CP	3	D	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4404	MW529479	OUT 7	OUT 7	OUT 8	CP	1	H	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4405	MW529480	OUT 9	OUT 9	OUT 10	CP	1	H	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4406	MW529481	OUT 7	OUT 7	OUT 8	CP	1	H	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4407	MW529482	OUT 7	OUT 7	OUT 8	CP	1	H	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4408	MW529483	OUT 9	OUT 9	OUT 10	CP	1	H	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4409	MW529484	OUT 71	OUT 84	OUT 112	CP	1	H	0	Sordariomycetes	Xylariales	*Seiridium*
PS4410	MW529485	OUT 7	OUT 7	OUT 8	CP	1	H	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4412	MW529487	OUT 7	OUT 7	OUT 8	CP	1	H	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4413	MW529488	OUT 7	OUT 7	OUT 8	CP	1	H	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4414	MW529489	OUT 9	OUT 9	OUT 10	CP	1	H	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4415	MW529490	OUT 7	OUT 7	OUT 8	CP	1	H	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4416	MW529491	OUT 71	OUT 84	OUT 113	CP	1	H	1	Sordariomycetes	Xylariales	*Seiridium*
PS4417	MW529492	OUT 71	OUT 84	OUT 113	CP	1	H	1	Sordariomycetes	Xylariales	*Seiridium*
PS4418	MW529493	OUT 7	OUT 7	OUT 8	CP	1	H	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4419	MW529494	OUT 9	OUT 9	OUT 10	CP	1	H	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4420	MW529495	OUT 9	OUT 9	OUT 114	CP	1	H	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS4421	MW529496	OUT 9	OUT 9	OUT 10	CP	1	H	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4422	MW529497	OUT 7	OUT 7	OUT 8	CP	1	H	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4423	MW529498	OUT 7	OUT 7	OUT 8	CP	1	H	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4424	MW529499	OUT 7	OUT 7	OUT 8	CP	1	H	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4425	MW529500	OUT 7	OUT 7	OUT 8	CP	1	H	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4426	MW529501	OUT 9	OUT 9	OUT 10	CP	1	H	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4427	MW529502	OUT 7	OUT 7	OUT 8	CP	1	H	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4429	MW529503	OUT 7	OUT 7	OUT 8	CP	1	H	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4430	MW529504	OUT 29	OUT 33	OUT 40	CP	1	H	1	Sordariomycetes	Hypocreales	*Fusarium*
PS4431	MW529505	OUT 10	OUT 85	OUT 115	CP	1	H	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS4432	MW529506	OUT 7	OUT 7	OUT 8	CP	3	H	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4433	MW529507	OUT 9	OUT 9	OUT 10	CP	3	H	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4435	MW529508	OUT 9	OUT 9	OUT 10	CP	3	H	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS4438	MW529509	OUT 7	OUT 7	OUT 8	CP	3	H	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4439	MW529510	OUT 7	OUT 7	OUT 8	CP	3	H	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4440	MW529511	OUT 7	OUT 7	OUT 8	CP	3	H	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS4441	MW529512	OUT 7	OUT 7	OUT 8	CP	3	H	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4442	MW529513	OUT 72	OUT 86	OUT 116	CP	3	H	0	Sordariomycetes	Hypocreales	*Hypocrea*
PS4443	MW529514	OUT 7	OUT 7	OUT 8	CP	3	H	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4444	MW529515	OUT 73	OUT 87	OUT 117	CP	3	H	1	Sordariomycetes	Xylariales	*Annulohypoxylon*

PS4445	MW529516	OUT 7	OUT 7	OUT 8	CP	3	H	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4448	MW529517	OUT 7	OUT 7	OUT 8	CP	3	H	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4449	MW529518	OUT 7	OUT 7	OUT 8	CP	3	H	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS4450	MW529519	OUT 71	OUT 84	OUT 112	CP	3	H	1	Sordariomycetes	Xylariales	*Seiridium*
PS4451	MW529520	OUT 7	OUT 7	OUT 8	CP	3	H	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4452	MW529521	OUT 9	OUT 9	OUT 114	CP	3	H	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4453	MW529522	OUT 9	OUT 9	OUT 114	CP	3	H	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4454	MW529523	OUT 9	OUT 9	OUT 10	CP	3	H	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4455	MW529524	OUT 9	OUT 9	OUT 114	CP	3	H	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4456	MW529525	OUT 71	OUT 84	OUT 113	CP	3	H	1	Sordariomycetes	Xylariales	*Seiridium*
PS4457	MW529526	OUT 7	OUT 7	OUT 8	CP	3	H	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4459	MW529527	OUT 74	OUT 88	OUT 118	CP	3	H	1	Sordariomycetes	Hypocreales	*Fusarium*
PS4460	MW529528	OUT 71	OUT 84	OUT 113	CP	3	H	1	Sordariomycetes	Xylariales	*Seiridium*
PS4461	MW529529	OUT 9	OUT 9	OUT 114	CP	3	H	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4462	MW529530	OUT 7	OUT 7	OUT 8	CP	3	H	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4463	MW529531	OUT 9	OUT 9	OUT 10	CP	3	H	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4464	MW529532	OUT 7	OUT 7	OUT 8	CP	3	H	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4465	MW529533	OUT 71	OUT 84	OUT 113	CP	3	H	1	Sordariomycetes	Xylariales	*Seiridium*
PS4466	MW529534	OUT 7	OUT 7	OUT 8	CP	3	H	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4467	MW529535	OUT 9	OUT 9	OUT 10	CP	3	H	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4468	MW529536	OUT 7	OUT 7	OUT 8	CP	3	H	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4469	MW529537	OUT 7	OUT 7	OUT 8	CP	3	H	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4471	MW529538	OUT 9	OUT 9	OUT 10	CP	1	P	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4472	MW529539	OUT 9	OUT 9	OUT 10	CP	1	P	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4473	MW529540	OUT 9	OUT 9	OUT 10	CP	1	P	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4474	MW529541	OUT 9	OUT 9	OUT 114	CP	1	P	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4475	MW529542	OUT 7	OUT 7	OUT 8	CP	1	P	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS4476	MW529543	OUT 7	OUT 7	OUT 8	CP	1	P	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4477	MW529544	OUT 7	OUT 7	OUT 108	CP	1	P	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4478	MW529545	OUT 9	OUT 9	OUT 10	CP	1	P	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS4479	MW529546	OUT 7	OUT 7	OUT 8	CP	1	P	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4480	MW529547	OUT 7	OUT 7	OUT 8	CP	1	P	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4481	MW529548	OUT 9	OUT 9	OUT 29	CP	1	P	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4482	MW529549	OUT 9	OUT 9	OUT 29	CP	1	P	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS4483	MW529550	OUT 7	OUT 7	OUT 108	CP	1	P	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4484	MW529551	OUT 7	OUT 7	OUT 8	CP	1	P	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4485	MW529552	OUT 9	OUT 9	OUT 10	CP	1	P	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4486	MW529553	OUT 7	OUT 7	OUT 8	CP	1	P	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4487	MW529554	OUT 7	OUT 7	OUT 119	CP	1	P	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4488	MW529555	OUT 2	OUT 2	OUT 16	CP	1	P	1	Sordariomycetes	Sordariales	*Chaetomium*
PS4489	MW529556	OUT 42	OUT 48	OUT 73	CP	1	P	1	Sordariomycetes	Hypocreales	*Fusarium*
PS4502	MW529557	OUT 9	OUT 9	OUT 103	CP	3	P	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4503	MW529558	OUT 7	OUT 7	OUT 8	CP	3	P	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4504	MW529559	OUT 9	OUT 9	OUT 103	CP	3	P	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4506	MW529560	OUT 7	OUT 7	OUT 8	CP	3	P	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4507	MW529561	OUT 7	OUT 7	OUT 8	CP	3	P	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4508	MW529562	OUT 7	OUT 7	OUT 8	CP	3	P	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4510	MW529563	OUT 9	OUT 9	OUT 120	CP	3	P	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS4511	MW529564	OUT 9	OUT 9	OUT 10	CP	3	P	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS4512	MW529565	OUT 7	OUT 7	OUT 8	CP	3	P	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4513	MW529566	OUT 9	OUT 9	OUT 10	CP	3	P	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4514	MW529567	OUT 9	OUT 9	OUT 10	CP	3	P	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4515	MW529568	OUT 2	OUT 2	OUT 16	CP	3	P	0	Sordariomycetes	Sordariales	*Chaetomium*

PS4516	MW529569	OUT 7	OUT 7	OUT 108	CP	3	P	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS4517	MW529570	OUT 42	OUT 48	OUT 73	CP	3	P	0	Sordariomycetes	Hypocreales	*Fusarium*
PS4518	MW529571	OUT 42	OUT 48	OUT 73	CP	3	P	0	Sordariomycetes	Hypocreales	*Fusarium*
PS4520	MW529572	OUT 9	OUT 9	OUT 10	CP	3	P	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4521	MW529573	OUT 7	OUT 7	OUT 8	CP	3	P	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS4522	MW529574	OUT 42	OUT 48	OUT 73	CP	3	P	0	Sordariomycetes	Hypocreales	*Fusarium*
PS4523	MW529575	OUT 42	OUT 48	OUT 73	CP	3	P	0	Sordariomycetes	Hypocreales	*Fusarium*
PS4524	MW529576	OUT 9	OUT 9	OUT 10	CP	3	P	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4525	MW529577	OUT 9	OUT 9	OUT 10	CP	3	P	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4526	MW529578	OUT 9	OUT 9	OUT 10	CP	3	P	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS4527	MW529579	OUT 75	OUT 89	OUT 121	CP	3	P	1	Dothideomycetes	Pleosporales	*Parathyridaria*
PS4528	MW529580	OUT 9	OUT 9	OUT 10	CP	3	P	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4529	MW529581	OUT 9	OUT 9	OUT 10	CP	3	P	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4530	MW529582	OUT 9	OUT 9	OUT 10	CP	3	P	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4531	MW529583	OUT 44	OUT 50	OUT 79	CP	3	P	0	Sordariomycetes	Hypocreales	*Fusarium*
PS4532	MW529584	OUT 9	OUT 9	OUT 10	CP	3	P	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS4533	MW529585	OUT 7	OUT 7	OUT 8	CP	3	P	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4534	MW529586	OUT 54	OUT 62	OUT 77	CP	1	Z	1	Sordariomycetes	Hypocreales	*Fusarium*
PS4535	MW529587	OUT 9	OUT 9	OUT 10	CP	1	Z	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4537	MW529588	OUT 7	OUT 7	OUT 8	CP	1	Z	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4539	MW529589	OUT 7	OUT 7	OUT 8	CP	1	Z	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4540	MW529590	OUT 7	OUT 7	OUT 8	CP	1	Z	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS4541	MW529591	OUT 7	OUT 7	OUT 8	CP	1	Z	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4543	MW529592	OUT 7	OUT 7	OUT 8	CP	1	Z	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4544	MW529593	OUT 9	OUT 9	OUT 10	CP	1	Z	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4545	MW529594	OUT 9	OUT 9	OUT 10	CP	1	Z	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4546	MW529595	OUT 9	OUT 9	OUT 10	CP	1	Z	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4547	MW529596	OUT 9	OUT 9	OUT 10	CP	1	Z	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS4548	MW529597	OUT 9	OUT 9	OUT 10	CP	1	Z	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS4549	MW529598	OUT 42	OUT 48	OUT 73	CP	1	Z	0	Sordariomycetes	Hypocreales	*Fusarium*
PS4550	MW529599	OUT 9	OUT 9	OUT 10	CP	1	Z	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS4551	MW529600	OUT 9	OUT 9	OUT 10	CP	1	Z	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4552	MW529601	OUT 9	OUT 9	OUT 10	CP	1	Z	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS4553	MW529602	OUT 42	OUT 48	OUT 73	CP	1	Z	1	Sordariomycetes	Hypocreales	*Fusarium*
PS4554	MW529603	OUT 7	OUT 7	OUT 8	CP	1	Z	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4555	MW529604	OUT 7	OUT 7	OUT 8	CP	1	Z	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4556	MW529605	OUT 10	OUT 85	OUT 115	CP	1	Z	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS4557	MW529606	OUT 9	OUT 9	OUT 29	CP	1	Z	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4558	MW529607	OUT 9	OUT 9	OUT 10	CP	1	Z	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4559	MW529608	OUT 76	OUT 90	OUT 122	CP	1	Z	1	Sordariomycetes	Hypocreales	*Hypomyces*
PS4560	MW529609	OUT 7	OUT 7	OUT 123	CP	1	Z	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4561	MW529610	OUT 9	OUT 9	OUT 10	CP	1	Z	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS4563	MW529611	OUT 7	OUT 7	OUT 8	CP	1	Z	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4564	MW529612	OUT 9	OUT 9	OUT 29	CP	1	Z	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4565	MW529613	OUT 7	OUT 7	OUT 8	CP	1	Z	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS4567	MW529614	OUT 9	OUT 9	OUT 10	CP	3	Z	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4568	MW529615	OUT 9	OUT 9	OUT 10	CP	3	Z	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4569	MW529616	OUT 42	OUT 48	OUT 73	CP	3	Z	1	Sordariomycetes	Hypocreales	*Fusarium*
PS4570	MW529617	OUT 7	OUT 7	OUT 108	CP	3	Z	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4571	MW529618	OUT 9	OUT 9	OUT 10	CP	3	Z	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4572	MW529619	OUT 9	OUT 9	OUT 10	CP	3	Z	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS4573	MW529620	OUT 9	OUT 9	OUT 10	CP	3	Z	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4574	MW529621	OUT 9	OUT 9	OUT 10	CP	3	Z	0	Sordariomycetes	Hypocreales	*Trichoderma*

PS4575	MW529622	OUT 77	OUT 91	OUT 124	CP	3	Z	0	Dothideomycetes	Pleosporales	*Curvularia*
PS4576	MW529623	OUT 9	OUT 9	OUT 10	CP	3	Z	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS4577	MW529624	OUT 9	OUT 9	OUT 10	CP	3	Z	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4578	MW529625	OUT 4	OUT 4	OUT 125	CP	3	Z	0	Sordariomycetes	Hypocreales	*Fusarium*
PS4579	MW529626	OUT 9	OUT 9	OUT 10	CP	3	Z	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4580	MW529627	OUT 9	OUT 9	OUT 10	CP	3	Z	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4581	MW529628	OUT 9	OUT 9	OUT 10	CP	3	Z	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4582	MW529629	OUT 70	OUT 83	OUT 107	CP	3	Z	1	Sordariomycetes	Hypocreales	*Fusarium*
PS4583	MW529630	OUT 9	OUT 9	OUT 10	CP	3	Z	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4584	MW529631	OUT 9	OUT 9	OUT 10	CP	3	Z	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4585	MW529632	OUT 9	OUT 9	OUT 10	CP	3	Z	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4586	MW529633	OUT 9	OUT 9	OUT 10	CP	3	Z	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4587	MW529634	OUT 9	OUT 9	OUT 10	CP	3	Z	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS4588	MW529635	OUT 7	OUT 7	OUT 8	CP	3	Z	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4589	MW529636	OUT 9	OUT 9	OUT 10	CP	3	Z	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4590	MW529637	OUT 7	OUT 7	OUT 8	CP	3	Z	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4591	MW529638	OUT 7	OUT 7	OUT 8	CP	3	Z	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS4592	MW529639	OUT 9	OUT 9	OUT 10	CP	3	Z	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4593	MW529640	OUT 9	OUT 9	OUT 10	CP	3	Z	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4594	MW529641	OUT 7	OUT 7	OUT 8	CP	3	Z	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4595	MW529642	OUT 7	OUT 7	OUT 8	CP	3	Z	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4596	MW529643	OUT 7	OUT 7	OUT 97	CP	3	Z	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4597	MW529644	OUT 7	OUT 7	OUT 97	CP	3	Z	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4706	MW529645	OUT 20	OUT 32	OUT 126	CI	30	A	1	Agaricomycetes	Polyporales	*Ceriporia*
PS4708	MW529646	OUT 20	OUT 32	OUT 126	CI	30	A	0	Agaricomycetes	Polyporales	*Ceriporia*
PS4709	MW529647	OUT 20	OUT 32	OUT 126	CI	30	A	0	Agaricomycetes	Polyporales	*Ceriporia*
PS4710	MW529648	OUT 20	OUT 32	OUT 127	CI	30	A	1	Agaricomycetes	Polyporales	*Ceriporia*
PS4711	MW529649	OUT 4	OUT 15	OUT 18	CI	30	D	0	Sordariomycetes	Hypocreales	*Fusarium*
PS4714	MW529650	OUT 20	OUT 32	OUT 128	CI	30	H	0	Agaricomycetes	Polyporales	*Ceriporia*
PS4715	MW529651	OUT 20	OUT 32	OUT 126	CI	30	H	0	Agaricomycetes	Polyporales	*Ceriporia*
PS4716	MW529652	OUT 7	OUT 7	OUT 7	CI	30	H	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS4718	MW529653	OUT 78	OUT 92	OUT 129	CI	30	P	0	Dothideomycetes	Dothideales	*Aureobasidium*
PS4719	MW529654	OUT 20	OUT 32	OUT 128	CI	30	P	1	Agaricomycetes	Polyporales	*Ceriporia*
PS4725	MW529655	OUT 14	OUT 16	OUT 19	CI	30	Z	0	Sordariomycetes	Hypocreales	*Thyronectria*
PS4726	MW529656	OUT 14	OUT 16	OUT 19	CI	30	Z	0	Sordariomycetes	Hypocreales	*Thyronectria*
PS4728	MW529657	OUT 14	OUT 16	OUT 19	CI	30	Z	0	Sordariomycetes	Hypocreales	*Thyronectria*
PS4731	MW529658	OUT 79	OUT 93	OUT 130	CL	12	A	1	Sordariomycetes	Sordariales	*Lasiosphaeria*
PS4732	MW529659	OUT 50	OUT 57	OUT 131	CL	12	A	1	Dothideomycetes	Cladosporiales	*Cladosporium*
PS4733	MW529660	OUT 33	OUT 37	OUT 45	CL	12	A	0	Dothideomycetes	Botryosphaeriales	*Diplodia*
PS4734	MW529661	OUT 32	OUT 36	OUT 44	CL	12	A	1	Sordariomycetes	Diaporthales	*Diaporthe*
PS4736	MW529662	OUT 37	OUT 41	OUT 64	CL	12	A	0	Sordariomycetes	Diaporthales	*Diaporthe*
PS4737	MW529663	OUT 32	OUT 36	OUT 71	CL	18	A	1	Sordariomycetes	Diaporthales	*Diaporthe*
PS4738	MW529664	OUT 15	OUT 17	OUT 43	CL	18	A	1	Dothideomycetes	Botryosphaeriales	*Diplodia*
PS4740	MW529665	OUT 33	OUT 37	OUT 45	CL	18	A	1	Dothideomycetes	Botryosphaeriales	*Diplodia*
PS4741	MW529666	OUT 32	OUT 36	OUT 44	CL	18	A	0	Sordariomycetes	Diaporthales	*Diaporthe*
PS4742	MW529667	OUT 80	OUT 94	OUT 132	CL	18	A	1	Agaricomycetes	Polyporales	*Geesterania*
PS4743	MW529668	OUT 81	OUT 95	OUT 133	CL	18	A	0	Sordariomycetes	Hypocreales	*Fusarium*
PS4745	MW529669	OUT 82	OUT 96	OUT 134	CL	12	D	0	Xylonomycetes	Symbiotaphrinales	*Symbiotaphrina*
PS4746	MW529670	OUT 83	OUT 97	OUT 135	CL	12	D	0	Sordariomycetes	Togniniales	*Phaeoacremonium*
PS4747	MW529671	OUT 84	OUT 98	OUT 136	CL	18	D	1	Sordariomycetes	Ophiostomatales	*Raffaelea*
PS4749	MW529672	OUT 65	OUT 76	OUT 94	CL	12	H	0	Sordariomycetes	Xylariales	*Pestalotiopsis*
PS4750	MW529673	OUT 7	OUT 7	OUT 8	CL	12	H	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4751	MW529674	OUT 9	OUT 9	OUT 103	CL	12	H	1	Sordariomycetes	Hypocreales	*Trichoderma*

PS4752	MW529675	OUT 85	OUT 99	OUT 137	CL	12	H	0	Sordariomycetes	Sordariales	*Chaetomium*
PS4753	MW529676	OUT 65	OUT 76	OUT 94	CL	12	H	0	Sordariomycetes	Xylariales	*Pestalotiopsis*
PS4754	MW529677	OUT 65	OUT 76	OUT 94	CL	12	H	1	Sordariomycetes	Xylariales	*Pestalotiopsis*
PS4755	MW529678	OUT 7	OUT 7	OUT 97	CL	12	H	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS4756	MW529679	OUT 7	OUT 7	OUT 8	CL	12	H	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4757	MW529680	OUT 9	OUT 9	OUT 10	CL	12	H	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4760	MW529682	OUT 9	OUT 9	OUT 10	CL	12	H	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4761	MW529683	OUT 9	OUT 9	OUT 10	CL	12	H	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS4762	MW529684	OUT 20	OUT 32	OUT 128	CL	12	H	0	Agaricomycetes	Polyporales	*Ceriporia*
PS4763	MW529685	OUT 9	OUT 9	OUT 10	CL	12	H	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4764	MW529686	OUT 9	OUT 9	OUT 10	CL	12	H	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS4765	MW529687	OUT 7	OUT 7	OUT 97	CL	12	H	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS4766	MW529688	OUT 9	OUT 9	OUT 10	CL	12	H	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS4767	MW529689	OUT 7	OUT 7	OUT 97	CL	12	H	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS4768	MW529690	OUT 7	OUT 7	OUT 97	CL	12	H	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4769	MW529691	OUT 7	OUT 7	OUT 97	CL	12	H	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS4770	MW529692	OUT 7	OUT 7	OUT 97	CL	12	H	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS4771	MW529693	OUT 7	OUT 7	OUT 97	CL	12	H	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS4772	MW529694	OUT 7	OUT 7	OUT 97	CL	12	H	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4773	MW529695	OUT 7	OUT 7	OUT 97	CL	12	H	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS4774	MW529696	OUT 7	OUT 7	OUT 97	CL	12	H	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4775	MW529697	OUT 7	OUT 7	OUT 97	CL	12	H	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS4776	MW529698	OUT 7	OUT 7	OUT 97	CL	12	H	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS4777	MW529699	OUT 7	OUT 7	OUT 8	CL	12	H	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS4778	MW529700	OUT 7	OUT 7	OUT 97	CL	12	H	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4779	MW529701	OUT 7	OUT 7	OUT 97	CL	12	H	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4780	MW529702	OUT 31	OUT 100	OUT 138	CL	18	H	0	Sordariomycetes	Xylariales	*Anthostomelloides*
PS4781	MW529703	OUT 9	OUT 9	OUT 29	CL	18	H	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4782	MW529704	OUT 9	OUT 9	OUT 29	CL	18	H	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4784	MW529705	OUT 86	OUT 101	OUT 139	CL	18	H	0	Dothideomycetes	Pleosporales	*Montagnula*
PS4787	MW529706	OUT 37	OUT 41	OUT 51	CL	12	P	0	Sordariomycetes	Diaporthales	*Diaporthe*
PS4790	MW529707	OUT 32	OUT 36	OUT 71	CL	12	P	0	Sordariomycetes	Diaporthales	*Diaporthe*
PS4791	MW529708	OUT 20	OUT 32	OUT 39	CL	18	P	1	Agaricomycetes	Polyporales	*Ceriporia*
PS4792	MW529709	OUT 20	OUT 32	OUT 39	CL	18	P	0	Agaricomycetes	Polyporales	*Ceriporia*
PS4793	MW529710	OUT 20	OUT 32	OUT 39	CL	18	P	0	Agaricomycetes	Polyporales	*Ceriporia*
PS4794	MW529711	OUT 20	OUT 32	OUT 127	CL	18	P	0	Agaricomycetes	Polyporales	*Ceriporia*
PS4795	MW529712	OUT 20	OUT 32	OUT 39	CL	18	P	0	Agaricomycetes	Polyporales	*Ceriporia*
PS4797	MW529713	OUT 32	OUT 36	OUT 48	CL	12	Z	0	Sordariomycetes	Diaporthales	*Diaporthe*
PS4798	MW529714	OUT 15	OUT 17	OUT 43	CL	12	Z	0	Dothideomycetes	Botryosphaeriales	*Diplodia*
PS4799	MW529715	OUT 6	OUT 6	OUT 6	CL	12	Z	1	Sordariomycetes	Sordariales	*Chaetomium*
PS4800	MW529716	OUT 44	OUT 50	OUT 62	CL	12	Z	0	Sordariomycetes	Hypocreales	*Fusarium*
PS4801	MW529717	OUT 87	OUT 102	OUT 140	CL	12	Z	1	Dothideomycetes	Pleosporales	*Anteaglonium*
PS4802	MW529718	OUT 42	OUT 48	OUT 60	CL	12	Z	0	Sordariomycetes	Hypocreales	*Fusarium*
PS4803	MW529719	OUT 9	OUT 9	OUT 120	CL	12	Z	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS4804	MW529720	OUT 9	OUT 9	OUT 29	CL	12	Z	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4805	MW529721	OUT 9	OUT 9	OUT 29	CL	12	Z	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS4807	MW529722	OUT 15	OUT 17	OUT 43	CL	18	Z	0	Dothideomycetes	Botryosphaeriales	*Diplodia*
PS4809	MW529723	OUT 20	OUT 32	OUT 127	CL	18	Z	0	Agaricomycetes	Polyporales	*Ceriporia*
PS4810	MW529724	OUT 20	OUT 32	OUT 128	CL	18	Z	0	Agaricomycetes	Polyporales	*Ceriporia*
PS4811	MW529725	OUT 20	OUT 32	OUT 128	CL	18	Z	0	Agaricomycetes	Polyporales	*Ceriporia*
PS4812	MW529726	OUT 20	OUT 32	OUT 127	CL	18	Z	0	Agaricomycetes	Polyporales	*Ceriporia*
PS4813	MW529727	OUT 10	OUT 75	OUT 93	CP	6	A	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4814	MW529728	OUT 10	OUT 75	OUT 93	CP	6	A	1	Sordariomycetes	Hypocreales	*Trichoderma*

PS4815	MW529729	OUT 7	OUT 7	OUT 8	CP	6	A	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4816	MW529730	OUT 7	OUT 7	OUT 97	CP	6	A	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4817	MW529731	OUT 10	OUT 75	OUT 93	CP	6	A	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4818	MW529732	OUT 10	OUT 75	OUT 93	CP	6	A	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4819	MW529733	OUT 9	OUT 9	OUT 120	CP	6	A	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS4820	MW529734	OUT 10	OUT 75	OUT 93	CP	6	A	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4821	MW529735	OUT 9	OUT 9	OUT 10	CP	6	A	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4822	MW529736	OUT 9	OUT 9	OUT 10	CP	6	A	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS4823	MW529737	OUT 88	OUT 103	OUT 141	CP	6	A	1	Eurotiomycetes	Eurotiales	*Penicillium*
PS4824	MW529738	OUT 9	OUT 9	OUT 10	CP	6	A	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4825	MW529739	OUT 7	OUT 7	OUT 8	CP	6	A	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4826	MW529740	OUT 9	OUT 9	OUT 10	CP	6	A	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS4827	MW529741	OUT 9	OUT 9	OUT 10	CP	6	A	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4828	MW529742	OUT 7	OUT 7	OUT 8	CP	6	A	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4829	MW529743	OUT 7	OUT 7	OUT 97	CP	6	A	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS4830	MW529744	OUT 7	OUT 7	OUT 8	CP	6	A	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4831	MW529745	OUT 7	OUT 7	OUT 8	CP	6	A	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4832	MW529746	OUT 9	OUT 9	OUT 10	CP	6	A	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS4833	MW529747	OUT 9	OUT 9	OUT 10	CP	6	A	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4834	MW529748	OUT 7	OUT 7	OUT 97	CP	6	A	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4835	MW529749	OUT 68	OUT 81	OUT 104	CP	6	A	1	Sordariomycetes	Hypocreales	*Thyronectria*
PS4836	MW529750	OUT 9	OUT 9	OUT 10	CP	6	A	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4837	MW529751	OUT 7	OUT 7	OUT 97	CP	6	A	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4838	MW529752	OUT 7	OUT 7	OUT 8	CP	6	D	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS4839	MW529753	OUT 7	OUT 7	OUT 8	CP	6	D	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS4840	MW529754	OUT 7	OUT 7	OUT 8	CP	6	D	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4841	MW529755	OUT 9	OUT 9	OUT 10	CP	6	D	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4842	MW529756	OUT 7	OUT 7	OUT 8	CP	6	D	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4844	MW529757	OUT 7	OUT 7	OUT 32	CP	6	D	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4845	MW529758	OUT 89	OUT 104	OUT 142	CP	6	D	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4847	MW529759	OUT 70	OUT 83	OUT 107	CP	6	D	1	Sordariomycetes	Hypocreales	*Fusarium*
PS4848	MW529760	OUT 7	OUT 7	OUT 8	CP	6	D	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4850	MW529761	OUT 9	OUT 9	OUT 10	CP	6	D	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4852	MW529762	OUT 42	OUT 48	OUT 73	CP	6	D	0	Sordariomycetes	Hypocreales	*Fusarium*
PS4853	MW529763	OUT 7	OUT 7	OUT 8	CP	6	D	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4854	MW529764	OUT 9	OUT 9	OUT 103	CP	6	D	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4855	MW529765	OUT 42	OUT 48	OUT 73	CP	6	D	1	Sordariomycetes	Hypocreales	*Fusarium*
PS4856	MW529766	OUT 4	OUT 4	OUT 125	CP	6	D	0	Sordariomycetes	Hypocreales	*Fusarium*
PS4858	MW529767	OUT 70	OUT 83	OUT 107	CP	6	D	1	Sordariomycetes	Hypocreales	*Fusarium*
PS4859	MW529768	OUT 9	OUT 9	OUT 10	CP	6	D	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4860	MW529769	OUT 74	OUT 88	OUT 143	CP	6	D	1	Sordariomycetes	Hypocreales	*Fusarium*
PS4861	MW529770	OUT 9	OUT 9	OUT 10	CP	6	D	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS4862	MW529771	OUT 9	OUT 9	OUT 10	CP	6	D	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4863	MW529772	OUT 9	OUT 9	OUT 29	CP	6	D	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS4866	MW529773	OUT 15	OUT 17	OUT 33	CP	6	H	0	Dothideomycetes	Botryosphaeriales	*Diplodia*
PS4867	MW529774	OUT 9	OUT 9	OUT 29	CP	6	H	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS4868	MW529775	OUT 9	OUT 9	OUT 29	CP	6	H	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4870	MW529776	OUT 9	OUT 9	OUT 10	CP	6	P	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4871	MW529777	OUT 84	OUT 98	OUT 145	CP	6	P	1	Sordariomycetes	Ophiostomatales	*Raffaelea*
PS4872	MW529778	OUT 15	OUT 17	OUT 43	CP	6	P	0	Dothideomycetes	Botryosphaeriales	*Diplodia*
PS4873	MW529779	OUT 7	OUT 7	OUT 8	CP	6	P	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS4874	MW529780	OUT 7	OUT 7	OUT 8	CP	6	P	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4875	MW529781	OUT 7	OUT 7	OUT 8	CP	6	P	1	Sordariomycetes	Hypocreales	*Trichoderma*

PS4877	MW529782	OUT 9	OUT 9	OUT 10	CP	6	P	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4878	MW529783	OUT 7	OUT 7	OUT 8	CP	6	P	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS4879	MW529784	OUT 7	OUT 7	OUT 8	CP	6	P	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4880	MW529785	OUT 7	OUT 7	OUT 8	CP	6	P	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4881	MW529786	OUT 7	OUT 7	OUT 8	CP	6	P	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4882	MW529787	OUT 7	OUT 7	OUT 97	CP	6	P	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4883	MW529788	OUT 7	OUT 7	OUT 8	CP	6	P	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4884	MW529789	OUT 7	OUT 7	OUT 8	CP	6	P	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4885	MW529790	OUT 7	OUT 7	OUT 97	CP	6	P	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4886	MW529791	OUT 7	OUT 7	OUT 97	CP	6	P	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS4887	MW529792	OUT 7	OUT 7	OUT 8	CP	6	P	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4888	MW529793	OUT 7	OUT 7	OUT 8	CP	6	P	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4889	MW529794	OUT 9	OUT 9	OUT 120	CP	6	P	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4890	MW529795	OUT 8	OUT 8	OUT 9	CP	6	P	1	Sordariomycetes	Sordariales	*Chaetomium*
PS4891	MW529796	OUT 7	OUT 7	OUT 97	CP	6	P	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4892	MW529797	OUT 9	OUT 9	OUT 103	CP	6	Z	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4893	MW529798	OUT 9	OUT 9	OUT 10	CP	6	Z	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4894	MW529799	OUT 90	OUT 105	OUT 146	CP	6	Z	1	Eurotiomycetes	Eurotiales	*Penicillium*
PS4895	MW529800	OUT 7	OUT 7	OUT 8	CP	6	Z	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4896	MW529801	OUT 9	OUT 9	OUT 10	CP	6	Z	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS4897	MW529802	OUT 7	OUT 7	OUT 97	CP	6	Z	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4898	MW529803	OUT 7	OUT 7	OUT 97	CP	6	Z	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4899	MW529804	OUT 9	OUT 9	OUT 147	CP	6	Z	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS4900	MW529805	OUT 9	OUT 9	OUT 10	CP	6	Z	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4901	MW529806	OUT 9	OUT 9	OUT 10	CP	6	Z	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4902	MW529807	OUT 9	OUT 9	OUT 10	CP	6	Z	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4903	MW529808	OUT 7	OUT 7	OUT 108	CP	6	Z	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS4904	MW529809	OUT 9	OUT 9	OUT 10	CP	6	Z	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4905	MW529810	OUT 9	OUT 9	OUT 10	CP	6	Z	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS4906	MW529811	OUT 9	OUT 9	OUT 10	CP	6	Z	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4907	MW529812	OUT 9	OUT 9	OUT 10	CP	6	Z	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4908	MW529813	OUT 7	OUT 7	OUT 8	CP	6	Z	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4909	MW529814	OUT 9	OUT 9	OUT 10	CP	6	Z	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS4910	MW529815	OUT 9	OUT 9	OUT 10	CP	6	Z	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS4911	MW529816	OUT 9	OUT 77	OUT 148	CP	6	Z	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS4912	MW529817	OUT 9	OUT 9	OUT 10	CP	6	Z	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS5823	MW530086	OUT 7	OUT 7	OUT 8	CP	18	A	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS5824	MW530087	OUT 9	OUT 9	OUT 10	CP	18	A	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS5825	MW530088	OUT 7	OUT 7	OUT 8	CP	18	A	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS5828	MW530089	OUT 7	OUT 7	OUT 8	CP	12	D	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS5829	MW530090	OUT 42	OUT 48	OUT 73	CP	12	D	1	Sordariomycetes	Hypocreales	*Fusarium*
PS5830	MW530091	OUT 7	OUT 7	OUT 8	CP	12	D	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS5831	MW530092	OUT 9	OUT 9	OUT 10	CP	12	D	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS5832	MW530093	OUT 44	OUT 50	OUT 79	CP	12	D	0	Sordariomycetes	Hypocreales	*Fusarium*
PS5834	MW530094	OUT 9	OUT 9	OUT 10	CP	12	D	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS5835	MW530095	OUT 9	OUT 9	OUT 29	CP	12	D	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS5836	MW530096	OUT 91	OUT 106	OUT 149	CP	12	D	1	Sordariomycetes	Coniochaetales	*Coniochaeta*
PS5837	MW530097	OUT 10	OUT 75	OUT 93	CP	12	D	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS5840	MW530098	OUT 7	OUT 7	OUT 8	CP	12	D	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS5841	MW530099	OUT 7	OUT 7	OUT 8	CP	12	D	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS5842	MW530100	OUT 9	OUT 9	OUT 29	CP	18	D	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS5843	MW530101	OUT 20	OUT 32	OUT 39	CP	18	D	0	Agaricomycetes	Polyporales	*Ceriporia*
PS5844	MW530102	OUT 7	OUT 7	OUT 8	CP	18	D	1	Sordariomycetes	Hypocreales	*Trichoderma*

PS5845	MW530103	OUT 20	OUT 32	OUT 39	CP	18	D	0	Agaricomycetes	Polyporales	*Ceriporia*
PS5846	MW530104	OUT 9	OUT 9	OUT 10	CP	18	D	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS5847	MW530105	OUT 9	OUT 9	OUT 10	CP	18	D	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS5850	MW530106	OUT 9	OUT 9	OUT 10	CP	12	P	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS5851	MW530107	OUT 22	OUT 25	OUT 150	CP	12	P	0	Sordariomycetes	Xylariales	*Xylaria*
PS5852	MW530108	OUT 8	OUT 8	OUT 151	CP	12	P	0	Sordariomycetes	Sordariales	*Chaetomium*
PS5853	MW530109	OUT 92	OUT 107	OUT 152	CP	12	P	1	Agaricomycetes	Corticiales	*Lindtneria*
PS5854	MW530110	OUT 92	OUT 107	OUT 152	CP	12	P	0	Agaricomycetes	Corticiales	*Lindtneria*
PS5855	MW530111	OUT 7	OUT 7	OUT 8	CP	12	P	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS5856	MW530112	OUT 9	OUT 9	OUT 10	CP	12	P	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS5857	MW530113	OUT 7	OUT 7	OUT 97	CP	12	P	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS5859	MW530114	OUT 42	OUT 48	OUT 73	CP	12	P	0	Sordariomycetes	Hypocreales	*Fusarium*
PS5860	MW530115	OUT 7	OUT 7	OUT 8	CP	12	P	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS5862	MW530116	OUT 70	OUT 83	OUT 107	CP	12	P	0	Sordariomycetes	Hypocreales	*Fusarium*
PS5863	MW530117	OUT 92	OUT 107	OUT 152	CP	18	P	0	Agaricomycetes	Corticiales	*Lindtneria*
PS5865	MW530118	OUT 9	OUT 9	OUT 10	CP	18	P	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS5869	MW530119	OUT 7	OUT 7	OUT 8	CP	18	P	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS5870	MW530120	OUT 29	OUT 33	OUT 40	CP	18	P	0	Sordariomycetes	Hypocreales	*Fusarium*
PS5871	MW530121	OUT 7	OUT 7	OUT 8	CP	18	P	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS5872	MW530122	OUT 42	OUT 48	OUT 73	CP	18	P	0	Sordariomycetes	Hypocreales	*Fusarium*
PS5875	MW530123	OUT 9	OUT 9	OUT 10	CP	12	Z	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS5876	MW530124	OUT 9	OUT 9	OUT 10	CP	12	Z	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS5878	MW530125	OUT 2	OUT 2	OUT 16	CP	12	Z	0	Sordariomycetes	Sordariales	*Chaetomium*
PS5879	MW530126	OUT 7	OUT 7	OUT 8	CP	12	Z	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS5880	MW530127	OUT 7	OUT 7	OUT 8	CP	12	Z	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS5881	MW530128	OUT 7	OUT 7	OUT 7	CP	12	Z	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS5882	MW530129	OUT 9	OUT 9	OUT 10	CP	12	Z	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS5883	MW530130	OUT 7	OUT 7	OUT 8	CP	12	Z	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS5884	MW530131	OUT 9	OUT 9	OUT 10	CP	12	Z	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS5885	MW530132	OUT 9	OUT 9	OUT 10	CP	12	Z	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS5886	MW530133	OUT 9	OUT 9	OUT 10	CP	12	Z	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS5887	MW530134	OUT 9	OUT 9	OUT 29	CP	12	Z	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS5888	MW530135	OUT 2	OUT 2	OUT 16	CP	12	Z	1	Sordariomycetes	Sordariales	*Chaetomium*
PS5889	MW530136	OUT 9	OUT 9	OUT 10	CP	12	Z	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS5890	MW530137	OUT 9	OUT 9	OUT 10	CP	12	Z	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS5891	MW530138	OUT 7	OUT 7	OUT 8	CP	12	Z	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS5892	MW530139	OUT 9	OUT 9	OUT 10	CP	12	Z	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS5894	MW530140	OUT 7	OUT 7	OUT 108	CP	12	Z	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS5895	MW530141	OUT 7	OUT 7	OUT 8	CP	12	Z	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS5896	MW530142	OUT 9	OUT 9	OUT 10	CP	12	Z	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS5897	MW530143	OUT 25	OUT 28	OUT 35	CP	12	Z	0	Dothideomycetes	Botryosphaeriales	*Microdiplodia*
PS5898	MW530144	OUT 7	OUT 7	OUT 8	CP	12	Z	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS5899	MW530145	OUT 9	OUT 9	OUT 10	CP	12	Z	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS6000	MW530230	OUT 7	OUT 7	OUT 153	CP	12	Z	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS6001	MW530231	OUT 34	OUT 38	OUT 53	CP	18	Z	1	Dothideomycetes	Pleosporales	*Pleospora*
PS6002	MW530232	OUT 9	OUT 9	OUT 10	CP	18	Z	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS6003	MW530233	OUT 7	OUT 7	OUT 8	CP	18	Z	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS5732	MW530026	OUT 22	OUT 25	OUT 150	CL	30	H	0	Sordariomycetes	Xylariales	*Xylaria*
PS5733	MW530027	OUT 20	OUT 32	OUT 154	CL	24	A	0	Agaricomycetes	Polyporales	*Ceriporia*
PS5734	MW530028	OUT 32	OUT 36	OUT 44	CL	24	A	1	Sordariomycetes	Diaporthales	*Diaporthe*
PS5735	MW530029	OUT 77	OUT 91	OUT 124	CL	24	A	0	Dothideomycetes	Pleosporales	*Curvularia*
PS5737	MW530030	OUT 20	OUT 32	OUT 39	CL	30	A	0	Agaricomycetes	Polyporales	*Ceriporia*
PS5738	MW530031	OUT 20	OUT 32	OUT 155	CL	30	A	0	Agaricomycetes	Polyporales	*Ceriporia*

PS5739	MW530032	OUT 93	OUT 108	OUT 156	CL	30	A	0	Sordariomycetes	Sordariales	*Podospora*
PS5741	MW530033	OUT 94	OUT 109	OUT 157	CL	24	D	0	Dothideomycetes	Pleosporales	*Teichospora*
PS5743	MW530034	OUT 32	OUT 36	OUT 48	CL	30	D	1	Sordariomycetes	Diaporthales	*Diaporthe*
PS5744	MW530035	OUT 95	OUT 110	OUT 158	CL	30	D	0	Sordariomycetes	Xylariales	*Seiridium*
PS5745	MW530036	OUT 96	OUT 111	OUT 159	CL	24	P	1	Dothideomycetes	Pleosporales	*Parathyridaria*
PS5750	MW530037	OUT 20	OUT 32	OUT 127	CL	24	Z	0	Agaricomycetes	Polyporales	*Ceriporia*
PS5751	MW530038	OUT 20	OUT 32	OUT 127	CL	24	Z	0	Agaricomycetes	Polyporales	*Ceriporia*
PS5753	MW530039	OUT 13	OUT 14	OUT 15	CL	24	Z	0	Dothideomycetes	Pleosporales	*Parathyridaria*
PS5762	MW530040	OUT 20	OUT 32	OUT 126	CL	30	Z	0	Agaricomycetes	Polyporales	*Ceriporia*
PS5763	MW530041	OUT 20	OUT 32	OUT 126	CL	30	Z	0	Agaricomycetes	Polyporales	*Ceriporia*
PS5764	MW530042	OUT 20	OUT 32	OUT 126	CL	30	Z	0	Agaricomycetes	Polyporales	*Ceriporia*
PS5769	MW530043	OUT 74	OUT 88	OUT 118	CP	12	H	0	Sordariomycetes	Hypocreales	*Fusarium*
PS5770	MW530044	OUT 9	OUT 9	OUT 103	CP	12	H	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS5773	MW530045	OUT 7	OUT 7	OUT 97	CP	12	H	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS5774	MW530046	OUT 7	OUT 7	OUT 32	CP	12	H	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS5775	MW530047	OUT 9	OUT 9	OUT 103	CP	12	H	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS5776	MW530048	OUT 9	OUT 9	OUT 10	CP	12	H	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS5779	MW530049	OUT 9	OUT 9	OUT 103	CP	12	H	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS5780	MW530050	OUT 9	OUT 9	OUT 103	CP	12	H	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS5781	MW530051	OUT 9	OUT 9	OUT 103	CP	12	H	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS5782	MW530052	OUT 9	OUT 9	OUT 103	CP	12	H	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS5784	MW530053	OUT 7	OUT 7	OUT 8	CP	18	H	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS5786	MW530054	OUT 20	OUT 32	OUT 126	CP	18	H	0	Agaricomycetes	Polyporales	*Ceriporia*
PS5787	MW530055	OUT 7	OUT 7	OUT 8	CP	12	A	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS5788	MW530056	OUT 7	OUT 7	OUT 32	CP	12	A	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS5789	MW530057	OUT 20	OUT 32	OUT 39	CP	12	A	0	Agaricomycetes	Polyporales	*Ceriporia*
PS5791	MW530058	OUT 97	OUT 112	OUT 160	CP	12	A	0	Dothideomycetes	Pleosporales	*Neocucurbitaria*
PS5792	MW530059	OUT 7	OUT 7	OUT 97	CP	12	A	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS5793	MW530060	OUT 7	OUT 7	OUT 32	CP	12	A	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS5794	MW530061	OUT 9	OUT 9	OUT 103	CP	12	A	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS5795	MW530062	OUT 9	OUT 9	OUT 103	CP	12	A	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS5796	MW530063	OUT 7	OUT 7	OUT 97	CP	12	A	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS5797	MW530064	OUT 9	OUT 9	OUT 120	CP	12	A	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS5798	MW530065	OUT 9	OUT 9	OUT 120	CP	12	A	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS5799	MW530066	OUT 9	OUT 9	OUT 103	CP	12	A	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS5800	MW530067	OUT 9	OUT 9	OUT 103	CP	12	A	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS5801	MW530068	OUT 7	OUT 7	OUT 97	CP	12	A	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS5802	MW530069	OUT 7	OUT 7	OUT 8	CP	12	A	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS5803	MW530070	OUT 7	OUT 7	OUT 32	CP	12	A	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS5805	MW530071	OUT 7	OUT 7	OUT 97	CP	12	A	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS5806	MW530072	OUT 7	OUT 7	OUT 97	CP	12	A	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS5807	MW530073	OUT 7	OUT 7	OUT 97	CP	12	A	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS5809	MW530074	OUT 7	OUT 7	OUT 97	CP	18	A	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS5810	MW530075	OUT 20	OUT 32	OUT 126	CP	18	A	1	Agaricomycetes	Polyporales	*Ceriporia*
PS5811	MW530076	OUT 18	OUT 20	OUT 161	CP	18	A	0	Sordariomycetes	Xylariales	*Anthostomelloides*
PS5812	MW530077	OUT 20	OUT 32	OUT 126	CP	18	A	0	Agaricomycetes	Polyporales	*Ceriporia*
PS5813	MW530078	OUT 20	OUT 32	OUT 162	CP	18	A	0	Agaricomycetes	Polyporales	*Ceriporia*
PS5816	MW530079	OUT 98	OUT 113	OUT 163	CP	18	A	0	Dothideomycetes	Botryosphaeriales	*Saccharata*
PS5817	MW530080	OUT 7	OUT 7	OUT 97	CP	18	A	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS5818	MW530081	OUT 9	OUT 9	OUT 103	CP	18	A	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS5819	MW530082	OUT 9	OUT 9	OUT 103	CP	18	A	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS5820	MW530083	OUT 9	OUT 9	OUT 103	CP	18	A	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS5821	MW530084	OUT 7	OUT 7	OUT 97	CP	18	A	0	Sordariomycetes	Hypocreales	*Trichoderma*

PS5822	MW530085	OUT 7	OUT 7	OUT 97	CP	18	A	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS6683	MW530262	OUT 2	OUT 2	OUT 16	CP	30	P	1	Sordariomycetes	Sordariales	*Chaetomium*
PS6655	MW530236	OUT 7	OUT 7	OUT 8	CP	24	H	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS6657	MW530238	OUT 99	OUT 114	OUT 164	CP	24	H	0	Sordariomycetes	Xylariales	*Barrmaelia*
PS6658	MW530239	OUT 7	OUT 7	OUT 8	CP	24	H	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS6659	MW530240	OUT 9	OUT 9	OUT 10	CP	24	H	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS6660	MW530241	OUT 7	OUT 7	OUT 8	CP	24	H	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS6661	MW530242	OUT 99	OUT 114	OUT 164	CP	24	H	0	Sordariomycetes	Xylariales	*Barrmaelia*
PS6662	MW530243	OUT 100	OUT 115	OUT 165	CP	24	D	1	Eurotiomycetes	Eurotiales	*Aspergillus*
PS6663	MW530244	OUT 101	OUT 116	OUT 166	CP	24	D	1	Sordariomycetes	Hypocreales	*Lecanicillium*
PS6664	MW530245	OUT 100	OUT 115	OUT 165	CP	24	D	1	Eurotiomycetes	Eurotiales	*Aspergillus*
PS6665	MW530246	OUT 7	OUT 7	OUT 108	CP	24	D	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS6666	MW530247	OUT 7	OUT 7	OUT 97	CP	24	D	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS6668	MW530248	OUT 7	OUT 7	OUT 8	CP	24	D	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS6669	MW530249	OUT 9	OUT 9	OUT 103	CP	24	D	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS6670	MW530250	OUT 90	OUT 105	OUT 146	CP	24	D	0	Eurotiomycetes	Eurotiales	*Penicillium*
PS6671	MW530251	OUT 44	OUT 50	OUT 79	CP	24	D	0	Sordariomycetes	Hypocreales	*Fusarium*
PS6673	MW530252	OUT 7	OUT 7	OUT 8	CP	24	Z	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS6674	MW530253	OUT 8	OUT 8	OUT 9	CP	24	Z	1	Sordariomycetes	Sordariales	*Chaetomium*
PS6675	MW530254	OUT 60	OUT 68	OUT 85	CP	24	Z	1	Sordariomycetes	Diaporthales	*Diaporthe*
PS6676	MW530255	OUT 29	OUT 33	OUT 40	CP	24	P	1	Sordariomycetes	Hypocreales	*Fusarium*
PS6677	MW530256	OUT 79	OUT 93	OUT 130	CP	24	P	1	Sordariomycetes	Sordariales	*Lasiosphaeria*
PS6678	MW530257	OUT 9	OUT 9	OUT 10	CP	30	P	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS6680	MW530259	OUT 8	OUT 8	OUT 9	CP	30	P	1	Sordariomycetes	Sordariales	*Chaetomium*
PS6681	MW530260	OUT 7	OUT 7	OUT 8	CP	30	P	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS6682	MW530261	OUT 9	OUT 9	OUT 10	CP	30	P	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS6684	MW530263	OUT 100	OUT 115	OUT 167	CP	30	D	0	Eurotiomycetes	Eurotiales	*Aspergillus*
PS6686	MW530265	OUT 7	OUT 7	OUT 32	CP	30	H	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS6687	MW530266	OUT 102	OUT 117	OUT 168	CP	30	H	0	Sordariomycetes	Xylariales	*Anthostomelloides*
PS6688	MW530267	OUT 103	OUT 118	OUT 169	CP	30	H	0	Sordariomycetes	Sordariomycetidae *incertae sedis*	*Woswasia*
PS6689	MW530268	OUT 100	OUT 115	OUT 165	CP	30	H	0	Eurotiomycetes	Eurotiales	*Aspergillus*
PS6690	MW530269	OUT 4	OUT 4	OUT 125	CP	30	Z	0	Sordariomycetes	Hypocreales	*Fusarium*
PS6693	MW530270	OUT 7	OUT 7	OUT 97	CP	30	Z	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS6694	MW530271	OUT 7	OUT 7	OUT 97	CP	30	Z	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS6695	MW530272	OUT 9	OUT 9	OUT 120	CP	30	Z	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS6697	MW530273	OUT 104	OUT 119	OUT 170	CP	30	Z	0	Sordariomycetes	Xylariales	*Anthostomelloides*
PS6653	MW530234	OUT 20	OUT 32	OUT 128	CP	24	H	0	Agaricomycetes	Polyporales	*Ceriporia*
PS6654	MW530235	OUT 105	OUT 120	OUT 171	CP	24	H	0	Sordariomycetes	Conioscyphales	*Conioscypha*
PS6656	MW530237	OUT 20	OUT 32	OUT 39	CP	24	H	0	Agaricomycetes	Polyporales	*Ceriporia*
PS6679	MW530258	OUT 100	OUT 115	OUT 165	CP	30	P	1	Eurotiomycetes	Eurotiales	*Aspergillus*
PS6685	MW530264	OUT 106	OUT 121	OUT 172	CP	30	H	0	Pezizomycetes	Pezizales	*Smardaea*
PS4953	MW529818	OUT 18	OUT 20	OUT 24	JC	6	A	0	Sordariomycetes	Xylariales	*Anthostomelloides*
PS4954	MW529819	OUT 22	OUT 25	OUT 173	JC	6	A	1	Sordariomycetes	Xylariales	*Xylaria*
PS4955	MW529820	OUT 107	OUT 122	OUT 174	JC	6	A	0	Dothideomycetes	Pleosporales	*Helminthosporium*
PS4956	MW529821	OUT 22	OUT 25	OUT 30	JC	6	A	1	Sordariomycetes	Xylariales	*Xylaria*
PS4957	MW529822	OUT 18	OUT 20	OUT 24	JC	6	A	0	Sordariomycetes	Xylariales	*Anthostomelloides*
PS4958	MW529823	OUT 108	OUT 123	OUT 175	JC	6	A	0	Sordariomycetes	Sordariales	*Floropilus*
PS4960	MW529824	OUT 84	OUT 124	OUT 176	JC	6	D	0	Sordariomycetes	Xylariales	*Annulohypoxylon*
PS4961	MW529825	OUT 109	OUT 125	OUT 177	JC	6	D	0	Sordariomycetes	Xylariales	*Xylaria*
PS4963	MW529826	OUT 22	OUT 25	OUT 178	JC	6	H	0	Sordariomycetes	Xylariales	*Xylaria*
PS4965	MW529827	OUT 22	OUT 25	OUT 173	JC	6	H	0	Sordariomycetes	Xylariales	*Xylaria*
PS4966	MW529828	OUT 22	OUT 25	OUT 30	JC	6	H	0	Sordariomycetes	Xylariales	*Xylaria*
PS4967	MW529829	OUT 22	OUT 25	OUT 150	JC	6	H	0	Sordariomycetes	Xylariales	*Xylaria*

PS4968	MW529830	OUT 22	OUT 25	OUT 30	JC	6	H	0	Sordariomycetes	Xylariales	*Xylaria*
PS4972	MW529831	OUT 84	OUT 98	OUT 145	JC	6	H	0	Sordariomycetes	Ophiostomatales	*Raffaelea*
PS4975	MW529832	OUT 22	OUT 25	OUT 150	JC	6	H	0	Sordariomycetes	Xylariales	*Xylaria*
PS4976	MW529833	OUT 84	OUT 98	OUT 179	JC	6	H	0	Sordariomycetes	Ophiostomatales	*Raffaelea*
PS4977	MW529834	OUT 22	OUT 25	OUT 178	JC	6	H	0	Sordariomycetes	Xylariales	*Xylaria*
PS4979	MW529835	OUT 22	OUT 25	OUT 150	JC	6	H	0	Sordariomycetes	Xylariales	*Xylaria*
PS4980	MW529836	OUT 110	OUT 126	OUT 180	JC	6	P	0	Sordariomycetes	Xylariales	*Xylaria*
PS4981	MW529837	OUT 22	OUT 25	OUT 150	JC	6	P	1	Sordariomycetes	Xylariales	*Xylaria*
PS4982	MW529838	OUT 22	OUT 25	OUT 30	JC	6	P	1	Sordariomycetes	Xylariales	*Xylaria*
PS4983	MW529839	OUT 84	OUT 98	OUT 179	JC	6	P	1	Sordariomycetes	Ophiostomatales	*Raffaelea*
PS4984	MW529840	OUT 22	OUT 25	OUT 150	JC	6	P	1	Sordariomycetes	Xylariales	*Xylaria*
PS4985	MW529841	OUT 22	OUT 25	OUT 150	JC	6	P	0	Sordariomycetes	Xylariales	*Xylaria*
PS4987	MW529842	OUT 20	OUT 32	OUT 128	JC	6	P	0	Agaricomycetes	Polyporales	*Ceriporia*
PS4989	MW529843	OUT 20	OUT 32	OUT 127	JC	6	P	0	Agaricomycetes	Polyporales	*Ceriporia*
PS4990	MW529844	OUT 22	OUT 25	OUT 178	JC	6	P	0	Sordariomycetes	Xylariales	*Xylaria*
PS4991	MW529845	OUT 22	OUT 25	OUT 30	JC	6	P	0	Sordariomycetes	Xylariales	*Xylaria*
PS4992	MW529846	OUT 22	OUT 25	OUT 178	JC	6	P	0	Sordariomycetes	Xylariales	*Xylaria*
PS4993	MW529847	OUT 111	OUT 127	OUT 181	JC	6	P	1	Sordariomycetes	Xylariales	*Annulohypoxylon*
PS4994	MW529848	OUT 112	OUT 128	OUT 182	JC	6	Z	0	Sordariomycetes	Xylariales	*Xylaria*
PS4995	MW529849	OUT 14	OUT 16	OUT 52	JC	6	Z	0	Sordariomycetes	Hypocreales	*Thyronectria*
PS4997	MW529850	OUT 113	OUT 129	OUT 183	JC	6	Z	0	Sordariomycetes	Xylariales	*Xylaria*
PS4998	MW529851	OUT 114	OUT 130	OUT 184	JC	6	Z	0	Sordariomycetes	Sordariales	*Acrophialophora*
PS5000	MW529852	OUT 22	OUT 25	OUT 150	JC	6	Z	0	Sordariomycetes	Xylariales	*Xylaria*
PS5001	MW529853	OUT 110	OUT 126	OUT 185	JC	6	Z	0	Sordariomycetes	Xylariales	*Xylaria*
PS5099	MW529854	OUT 22	OUT 25	OUT 178	JC	1	A	1	Sordariomycetes	Xylariales	*Xylaria*
PS5100	MW529855	OUT 15	OUT 17	OUT 33	JC	1	A	0	Dothideomycetes	Botryosphaeriales	*Diplodia*
PS5101	MW529856	OUT 22	OUT 25	OUT 178	JC	1	A	1	Sordariomycetes	Xylariales	*Xylaria*
PS5102	MW529857	OUT 115	OUT 131	OUT 186	JC	1	A	1	Sordariomycetes	Xylariales	*Annulohypoxylon*
PS5103	MW529858	OUT 22	OUT 25	OUT 178	JC	1	A	1	Sordariomycetes	Xylariales	*Xylaria*
PS5104	MW529859	OUT 84	OUT 98	OUT 179	JC	1	A	0	Sordariomycetes	Ophiostomatales	*Raffaelea*
PS5105	MW529860	OUT 88	OUT 103	OUT 141	JC	1	A	0	Eurotiomycetes	Eurotiales	*Penicillium*
PS5106	MW529861	OUT 22	OUT 25	OUT 178	JC	1	A	1	Sordariomycetes	Xylariales	*Xylaria*
PS5107	MW529862	OUT 84	OUT 98	OUT 144	JC	1	A	1	Sordariomycetes	Ophiostomatales	*Raffaelea*
PS5108	MW529863	OUT 22	OUT 25	OUT 150	JC	1	A	1	Sordariomycetes	Xylariales	*Xylaria*
PS5109	MW529864	OUT 22	OUT 25	OUT 187	JC	1	A	1	Sordariomycetes	Xylariales	*Xylaria*
PS5111	MW529865	OUT 116	OUT 132	OUT 188	JC	3	A	1	Sordariomycetes	Hypocreales	*Fusarium*
PS5112	MW529866	OUT 42	OUT 48	OUT 73	JC	3	A	1	Sordariomycetes	Hypocreales	*Fusarium*
PS5113	MW529867	OUT 42	OUT 48	OUT 73	JC	3	A	1	Sordariomycetes	Hypocreales	*Fusarium*
PS5114	MW529868	OUT 42	OUT 48	OUT 60	JC	3	A	1	Sordariomycetes	Hypocreales	*Fusarium*
PS5115	MW529869	OUT 15	OUT 17	OUT 33	JC	3	A	0	Dothideomycetes	Botryosphaeriales	*Diplodia*
PS5116	MW529870	OUT 14	OUT 16	OUT 52	JC	3	A	0	Sordariomycetes	Hypocreales	*Thyronectria*
PS5117	MW529871	OUT 115	OUT 131	OUT 189	JC	3	A	1	Sordariomycetes	Xylariales	*Annulohypoxylon*
PS5119	MW529872	OUT 42	OUT 48	OUT 60	JC	3	A	1	Sordariomycetes	Hypocreales	*Fusarium*
PS5120	MW529873	OUT 15	OUT 17	OUT 33	JC	3	A	1	Dothideomycetes	Botryosphaeriales	*Diplodia*
PS5122	MW529874	OUT 4	OUT 133	OUT 190	JC	3	A	0	Sordariomycetes	Hypocreales	*Fusarium*
PS5124	MW529875	OUT 45	OUT 52	OUT 65	JC	1	D	1	Sordariomycetes	Glomerellales	*Colletotrichum*
PS5125	MW529876	OUT 15	OUT 17	OUT 33	JC	1	D	0	Dothideomycetes	Botryosphaeriales	*Diplodia*
PS5126	MW529877	OUT 42	OUT 48	OUT 60	JC	1	D	0	Sordariomycetes	Hypocreales	*Fusarium*
PS5127	MW529878	OUT 29	OUT 33	OUT 40	JC	1	D	1	Sordariomycetes	Hypocreales	*Fusarium*
PS5129	MW529879	OUT 42	OUT 48	OUT 60	JC	1	D	0	Sordariomycetes	Hypocreales	*Fusarium*
PS5130	MW529880	OUT 84	OUT 98	OUT 144	JC	1	D	1	Sordariomycetes	Ophiostomatales	*Raffaelea*
PS5132	MW529881	OUT 15	OUT 17	OUT 33	JC	1	D	1	Dothideomycetes	Botryosphaeriales	*Diplodia*
PS5133	MW529882	OUT 42	OUT 48	OUT 60	JC	3	D	0	Sordariomycetes	Hypocreales	*Fusarium*

PS5134	MW529883	OUT 42	OUT 134	OUT 191	JC	3	D	0	Sordariomycetes	Hypocreales	*Fusarium*
PS5135	MW529884	OUT 29	OUT 33	OUT 40	JC	3	D	1	Sordariomycetes	Hypocreales	*Fusarium*
PS5136	MW529885	OUT 42	OUT 48	OUT 60	JC	3	D	1	Sordariomycetes	Hypocreales	*Fusarium*
PS5137	MW529886	OUT 42	OUT 48	OUT 60	JC	3	D	1	Sordariomycetes	Hypocreales	*Fusarium*
PS5138	MW529887	OUT 4	OUT 133	OUT 190	JC	3	D	0	Sordariomycetes	Hypocreales	*Fusarium*
PS5139	MW529888	OUT 42	OUT 48	OUT 60	JC	3	D	0	Sordariomycetes	Hypocreales	*Fusarium*
PS5140	MW529889	OUT 4	OUT 133	OUT 190	JC	3	D	1	Sordariomycetes	Hypocreales	*Fusarium*
PS5141	MW529890	OUT 42	OUT 48	OUT 60	JC	3	D	1	Sordariomycetes	Hypocreales	*Fusarium*
PS5142	MW529891	OUT 42	OUT 48	OUT 60	JC	3	D	1	Sordariomycetes	Hypocreales	*Fusarium*
PS5143	MW529892	OUT 4	OUT 133	OUT 190	JC	3	D	1	Sordariomycetes	Hypocreales	*Fusarium*
PS5144	MW529893	OUT 117	OUT 135	OUT 192	JC	3	D	0	Sordariomycetes	Hypocreales	*Fusarium*
PS5145	MW529894	OUT 2	OUT 2	OUT 16	JC	3	D	1	Sordariomycetes	Sordariales	*Chaetomium*
PS5146	MW529895	OUT 4	OUT 133	OUT 190	JC	3	D	0	Sordariomycetes	Hypocreales	*Fusarium*
PS5147	MW529896	OUT 42	OUT 134	OUT 191	JC	3	D	1	Sordariomycetes	Hypocreales	*Fusarium*
PS5148	MW529897	OUT 42	OUT 48	OUT 60	JC	3	D	1	Sordariomycetes	Hypocreales	*Fusarium*
PS5149	MW529898	OUT 42	OUT 48	OUT 60	JC	3	D	1	Sordariomycetes	Hypocreales	*Fusarium*
PS5150	MW529899	OUT 45	OUT 52	OUT 65	JC	1	H	1	Sordariomycetes	Glomerellales	*Colletotrichum*
PS5151	MW529900	OUT 22	OUT 25	OUT 173	JC	1	H	1	Sordariomycetes	Xylariales	*Xylaria*
PS5152	MW529901	OUT 102	OUT 117	OUT 168	JC	1	H	1	Sordariomycetes	Xylariales	*Anthostomelloides*
PS5154	MW529902	OUT 118	OUT 136	OUT 193	JC	1	H	0	Sordariomycetes	Xylariales	*Entosordaria*
PS5155	MW529903	OUT 42	OUT 48	OUT 73	JC	1	H	0	Sordariomycetes	Hypocreales	*Fusarium*
PS5156	MW529904	OUT 4	OUT 4	OUT 4	JC	1	H	0	Sordariomycetes	Hypocreales	*Fusarium*
PS5157	MW529905	OUT 88	OUT 103	OUT 141	JC	1	H	1	Eurotiomycetes	Eurotiales	*Penicillium*
PS5158	MW529906	OUT 45	OUT 52	OUT 65	JC	1	H	1	Sordariomycetes	Glomerellales	*Colletotrichum*
PS5159	MW529907	OUT 22	OUT 25	OUT 178	JC	1	H	1	Sordariomycetes	Xylariales	*Xylaria*
PS5160	MW529908	OUT 84	OUT 98	OUT 145	JC	1	H	1	Sordariomycetes	Ophiostomatales	*Raffaelea*
PS5162	MW529909	OUT 18	OUT 20	OUT 161	JC	1	H	1	Sordariomycetes	Xylariales	*Anthostomelloides*
PS5163	MW529910	OUT 22	OUT 25	OUT 178	JC	1	H	1	Sordariomycetes	Xylariales	*Xylaria*
PS5165	MW529911	OUT 22	OUT 25	OUT 194	JC	1	H	1	Sordariomycetes	Xylariales	*Xylaria*
PS5166	MW529912	OUT 42	OUT 134	OUT 195	JC	1	H	0	Sordariomycetes	Hypocreales	*Fusarium*
PS5167	MW529913	OUT 15	OUT 17	OUT 33	JC	1	H	0	Dothideomycetes	Botryosphaeriales	*Diplodia*
PS5168	MW529914	OUT 42	OUT 48	OUT 60	JC	1	H	1	Sordariomycetes	Hypocreales	*Fusarium*
PS5169	MW529915	OUT 15	OUT 17	OUT 43	JC	1	H	1	Dothideomycetes	Botryosphaeriales	*Diplodia*
PS5170	MW529916	OUT 119	OUT 137	OUT 196	JC	3	H	1	Sordariomycetes	Pleurotheciales	*Phaeoisaria*
PS5172	MW529917	OUT 22	OUT 25	OUT 30	JC	3	H	1	Sordariomycetes	Xylariales	*Xylaria*
PS5173	MW529918	OUT 22	OUT 25	OUT 178	JC	3	H	1	Sordariomycetes	Xylariales	*Xylaria*
PS5174	MW529919	OUT 42	OUT 48	OUT 73	JC	3	H	1	Sordariomycetes	Hypocreales	*Fusarium*
PS5175	MW529920	OUT 14	OUT 16	OUT 197	JC	3	H	0	Sordariomycetes	Hypocreales	*Thyronectria*
PS5176	MW529921	OUT 15	OUT 17	OUT 33	JC	3	H	0	Dothideomycetes	Botryosphaeriales	*Diplodia*
PS5177	MW529922	OUT 42	OUT 48	OUT 60	JC	3	H	1	Sordariomycetes	Hypocreales	*Fusarium*
PS5178	MW529923	OUT 42	OUT 48	OUT 60	JC	3	H	0	Sordariomycetes	Hypocreales	*Fusarium*
PS5179	MW529924	OUT 42	OUT 48	OUT 73	JC	3	H	1	Sordariomycetes	Hypocreales	*Fusarium*
PS5180	MW529925	OUT 42	OUT 48	OUT 73	JC	3	H	1	Sordariomycetes	Hypocreales	*Fusarium*
PS5181	MW529926	OUT 84	OUT 124	OUT 198	JC	3	H	0	Sordariomycetes	Xylariales	*Annulohypoxylon*
PS5182	MW529927	OUT 31	OUT 35	OUT 42	JC	3	H	1	Sordariomycetes	Xylariales	*Anthostomelloides*
PS5183	MW529928	OUT 22	OUT 25	OUT 178	JC	1	P	0	Sordariomycetes	Xylariales	*Xylaria*
PS5184	MW529929	OUT 22	OUT 25	OUT 178	JC	1	P	0	Sordariomycetes	Xylariales	*Xylaria*
PS5186	MW529930	OUT 22	OUT 25	OUT 178	JC	1	P	0	Sordariomycetes	Xylariales	*Xylaria*
PS5187	MW529931	OUT 22	OUT 25	OUT 150	JC	1	P	1	Sordariomycetes	Xylariales	*Xylaria*
PS5188	MW529932	OUT 31	OUT 35	OUT 199	JC	1	P	0	Sordariomycetes	Xylariales	*Anthostomelloides*
PS5189	MW529933	OUT 22	OUT 25	OUT 173	JC	1	P	0	Sordariomycetes	Xylariales	*Xylaria*
PS5191	MW529934	OUT 42	OUT 48	OUT 60	JC	1	P	1	Sordariomycetes	Hypocreales	*Fusarium*
PS5192	MW529935	OUT 22	OUT 25	OUT 178	JC	1	P	1	Sordariomycetes	Xylariales	*Xylaria*

PS5193	MW529936	OUT 22	OUT 25	OUT 30	JC	1	P	1	Sordariomycetes	Xylariales	*Xylaria*
PS5194	MW529937	OUT 88	OUT 103	OUT 141	JC	1	P	1	Eurotiomycetes	Eurotiales	*Penicillium*
PS5195	MW529938	OUT 22	OUT 25	OUT 150	JC	1	P	1	Sordariomycetes	Xylariales	*Xylaria*
PS5196	MW529939	OUT 120	OUT 138	OUT 200	JC	3	P	1	Sordariomycetes	Xylariales	*Entosordaria*
PS5197	MW529940	OUT 84	OUT 98	OUT 201	JC	3	P	0	Sordariomycetes	Ophiostomatales	*Raffaelea*
PS5198	MW529941	OUT 22	OUT 25	OUT 178	JC	3	P	0	Sordariomycetes	Xylariales	*Xylaria*
PS5199	MW529942	OUT 15	OUT 17	OUT 33	JC	3	P	1	Dothideomycetes	Botryosphaeriales	*Diplodia*
PS5200	MW529943	OUT 84	OUT 98	OUT 145	JC	3	P	1	Sordariomycetes	Ophiostomatales	*Raffaelea*
PS5201	MW529944	OUT 42	OUT 48	OUT 60	JC	3	P	0	Sordariomycetes	Hypocreales	*Fusarium*
PS5202	MW529945	OUT 22	OUT 25	OUT 173	JC	3	P	1	Sordariomycetes	Xylariales	*Xylaria*
PS5203	MW529946	OUT 84	OUT 98	OUT 179	JC	3	P	0	Sordariomycetes	Ophiostomatales	*Raffaelea*
PS5204	MW529947	OUT 121	OUT 139	OUT 202	JC	3	P	1	Oomycetes	Pythiales	*Pythium*
PS5206	MW529948	OUT 4	OUT 15	OUT 18	JC	3	P	1	Sordariomycetes	Hypocreales	*Fusarium*
PS5207	MW529949	OUT 122	OUT 140	OUT 203	JC	3	P	0	Sordariomycetes	Xylariales	*Anthostomelloides*
PS5208	MW529950	OUT 4	OUT 4	OUT 205	JC	3	P	0	Sordariomycetes	Hypocreales	*Fusarium*
PS5209	MW529951	OUT 42	OUT 48	OUT 60	JC	1	Z	1	Sordariomycetes	Hypocreales	*Fusarium*
PS5211	MW529952	OUT 42	OUT 48	OUT 60	JC	1	Z	1	Sordariomycetes	Hypocreales	*Fusarium*
PS5212	MW529953	OUT 42	OUT 48	OUT 206	JC	1	Z	1	Sordariomycetes	Hypocreales	*Fusarium*
PS5213	MW529954	OUT 42	OUT 48	OUT 60	JC	1	Z	1	Sordariomycetes	Hypocreales	*Fusarium*
PS5214	MW529955	OUT 42	OUT 48	OUT 60	JC	1	Z	1	Sordariomycetes	Hypocreales	*Fusarium*
PS5215	MW529956	OUT 123	OUT 141	OUT 207	JC	1	Z	1	Sordariomycetes	Xylariales	*Anthostomelloides*
PS5216	MW529957	OUT 9	OUT 9	OUT 10	JC	1	Z	1	Sordariomycetes	Hypocreales	*Trichoderma*
PS5217	MW529958	OUT 15	OUT 17	OUT 20	JC	1	Z	0	Dothideomycetes	Botryosphaeriales	*Diplodia*
PS5218	MW529959	OUT 22	OUT 25	OUT 178	JC	1	Z	1	Sordariomycetes	Xylariales	*Xylaria*
PS5219	MW529960	OUT 42	OUT 48	OUT 73	JC	1	Z	1	Sordariomycetes	Hypocreales	*Fusarium*
PS5220	MW529961	OUT 42	OUT 48	OUT 73	JC	1	Z	0	Sordariomycetes	Hypocreales	*Fusarium*
PS5221	MW529962	OUT 84	OUT 98	OUT 179	JC	1	Z	0	Sordariomycetes	Ophiostomatales	*Raffaelea*
PS5222	MW529963	OUT 22	OUT 25	OUT 150	JC	1	Z	1	Sordariomycetes	Xylariales	*Xylaria*
PS5223	MW529964	OUT 42	OUT 48	OUT 60	JC	1	Z	1	Sordariomycetes	Hypocreales	*Fusarium*
PS5224	MW529965	OUT 15	OUT 17	OUT 43	JC	3	Z	1	Dothideomycetes	Botryosphaeriales	*Diplodia*
PS5225	MW529966	OUT 42	OUT 48	OUT 60	JC	3	Z	1	Sordariomycetes	Hypocreales	*Fusarium*
PS5227	MW529967	OUT 42	OUT 48	OUT 208	JC	3	Z	1	Sordariomycetes	Hypocreales	*Fusarium*
PS5228	MW529968	OUT 9	OUT 9	OUT 114	JC	3	Z	0	Sordariomycetes	Hypocreales	*Trichoderma*
PS5231	MW529969	OUT 42	OUT 48	OUT 60	JC	3	Z	1	Sordariomycetes	Hypocreales	*Fusarium*
PS5232	MW529970	OUT 4	OUT 133	OUT 190	JC	3	Z	1	Sordariomycetes	Hypocreales	*Fusarium*
PS5233	MW529971	OUT 42	OUT 48	OUT 73	JC	3	Z	1	Sordariomycetes	Hypocreales	*Fusarium*
PS5234	MW529972	OUT 42	OUT 48	OUT 60	JC	3	Z	1	Sordariomycetes	Hypocreales	*Fusarium*
PS5235	MW529973	OUT 84	OUT 98	OUT 145	JC	3	Z	1	Sordariomycetes	Ophiostomatales	*Raffaelea*
PS5236	MW529974	OUT 124	OUT 142	OUT 209	JC	3	Z	0	Sordariomycetes	Sordariales	*Pseudothielavia*
PS5900	MW530146	OUT 84	OUT 98	OUT 145	JC	12	H	0	Sordariomycetes	Ophiostomatales	*Raffaelea*
PS5902	MW530147	OUT 84	OUT 98	OUT 145	JC	12	H	0	Sordariomycetes	Ophiostomatales	*Raffaelea*
PS5903	MW530148	OUT 22	OUT 25	OUT 173	JC	18	H	0	Sordariomycetes	Xylariales	*Xylaria*
PS5904	MW530149	OUT 20	OUT 32	OUT 127	JC	18	H	0	Agaricomycetes	Polyporales	*Ceriporia*
PS5905	MW530150	OUT 18	OUT 20	OUT 161	JC	18	H	0	Sordariomycetes	Xylariales	*Anthostomelloides*
PS5906	MW530151	OUT 84	OUT 98	OUT 179	JC	18	H	0	Sordariomycetes	Ophiostomatales	*Raffaelea*
PS5912	MW530152	OUT 20	OUT 32	OUT 39	JC	18	H	0	Agaricomycetes	Polyporales	*Ceriporia*
PS5913	MW530153	OUT 84	OUT 98	OUT 179	JC	18	H	0	Sordariomycetes	Ophiostomatales	*Raffaelea*
PS5914	MW530154	OUT 22	OUT 25	OUT 150	JC	18	H	0	Sordariomycetes	Xylariales	*Xylaria*
PS5915	MW530155	OUT 22	OUT 25	OUT 30	JC	12	A	0	Sordariomycetes	Xylariales	*Xylaria*
PS5916	MW530156	OUT 99	OUT 114	OUT 164	JC	12	A	0	Sordariomycetes	Xylariales	*Barrmaelia*
PS5917	MW530157	OUT 84	OUT 124	OUT 220	JC	12	A	0	Sordariomycetes	Xylariales	*Annulohypoxylon*
PS5918	MW530158	OUT 22	OUT 25	OUT 173	JC	12	A	0	Sordariomycetes	Xylariales	*Xylaria*
PS5919	MW530159	OUT 99	OUT 114	OUT 164	JC	12	A	0	Sordariomycetes	Xylariales	*Barrmaelia*

PS5920	MW530160	OUT 22	OUT 25	OUT 173	JC	12	A	1	Sordariomycetes	Xylariales	*Xylaria*
PS5921	MW530161	OUT 127	OUT 145	OUT 221	JC	12	A	0	Sordariomycetes	Xylariales	*Entosordaria*
PS5922	MW530162	OUT 22	OUT 25	OUT 150	JC	12	A	0	Sordariomycetes	Xylariales	*Xylaria*
PS5923	MW530163	OUT 22	OUT 25	OUT 187	JC	12	A	0	Sordariomycetes	Xylariales	*Xylaria*
PS5924	MW530164	OUT 22	OUT 25	OUT 178	JC	12	A	0	Sordariomycetes	Xylariales	*Xylaria*
PS5926	MW530166	OUT 22	OUT 25	OUT 173	JC	12	A	0	Sordariomycetes	Xylariales	*Xylaria*
PS5927	MW530167	OUT 22	OUT 25	OUT 30	JC	18	A	0	Sordariomycetes	Xylariales	*Xylaria*
PS5928	MW530168	OUT 22	OUT 25	OUT 178	JC	18	A	0	Sordariomycetes	Xylariales	*Xylaria*
PS5929	MW530169	OUT 22	OUT 25	OUT 178	JC	18	A	0	Sordariomycetes	Xylariales	*Xylaria*
PS5930	MW530170	OUT 22	OUT 25	OUT 150	JC	18	A	0	Sordariomycetes	Xylariales	*Xylaria*
PS5932	MW530171	OUT 31	OUT 35	OUT 199	JC	18	A	0	Sordariomycetes	Xylariales	*Anthostomelloides*
PS5934	MW530172	OUT 84	OUT 98	OUT 179	JC	18	A	0	Sordariomycetes	Ophiostomatales	*Raffaelea*
PS5935	MW530173	OUT 4	OUT 133	OUT 190	JC	18	A	0	Sordariomycetes	Hypocreales	*Fusarium*
PS5936	MW530174	OUT 22	OUT 25	OUT 178	JC	18	A	0	Sordariomycetes	Xylariales	*Xylaria*
PS5937	MW530175	OUT 130	OUT 149	OUT 222	JC	18	A	0	Sordariomycetes	Sordariales	*Chrysocorona*
PS5938	MW530176	OUT 18	OUT 20	OUT 24	JC	18	A	0	Sordariomycetes	Xylariales	*Anthostomelloides*
PS5939	MW530177	OUT 22	OUT 25	OUT 173	JC	18	A	0	Sordariomycetes	Xylariales	*Xylaria*
PS5940	MW530178	OUT 18	OUT 20	OUT 161	JC	18	A	0	Sordariomycetes	Xylariales	*Anthostomelloides*
PS5941	MW530179	OUT 20	OUT 32	OUT 39	JC	12	D	0	Agaricomycetes	Polyporales	*Ceriporia*
PS5944	MW530182	OUT 50	OUT 61	OUT 76	JC	12	D	0	Dothideomycetes	Cladosporiales	*Cladosporium*
PS5945	MW530183	OUT 131	OUT 150	OUT 223	JC	12	D	0	Sordariomycetes	Sordariales	*Podospora*
PS5946	MW530184	OUT 22	OUT 25	OUT 150	JC	12	D	0	Sordariomycetes	Xylariales	*Xylaria*
PS5950	MW530186	OUT 22	OUT 25	OUT 178	JC	12	D	0	Sordariomycetes	Xylariales	*Xylaria*
PS5951	MW530187	OUT 92	OUT 107	OUT 152	JC	12	D	0	Agaricomycetes	Corticiales	*Lindtneria*
PS5952	MW530188	OUT 20	OUT 32	OUT 127	JC	12	D	0	Agaricomycetes	Polyporales	*Ceriporia*
PS5954	MW530189	OUT 115	OUT 131	OUT 186	JC	18	D	1	Sordariomycetes	Xylariales	*Annulohypoxylon*
PS5955	MW530190	OUT 22	OUT 25	OUT 30	JC	18	D	0	Sordariomycetes	Xylariales	*Xylaria*
PS5956	MW530191	OUT 18	OUT 20	OUT 161	JC	12	P	1	Sordariomycetes	Xylariales	*Anthostomelloides*
PS5957	MW530192	OUT 132	OUT 151	OUT 224	JC	12	P	0	Sordariomycetes	Xylariales	*Entosordaria*
PS5958	MW530193	OUT 22	OUT 25	OUT 150	JC	12	P	0	Sordariomycetes	Xylariales	*Xylaria*
PS5959	MW530194	OUT 92	OUT 107	OUT 152	JC	12	P	0	Agaricomycetes	Corticiales	*Lindtneria*
PS5960	MW530195	OUT 92	OUT 107	OUT 152	JC	12	P	0	Agaricomycetes	Corticiales	*Lindtneria*
PS5961	MW530196	OUT 111	OUT 152	OUT 225	JC	12	P	1	Sordariomycetes	Xylariales	*Annulohypoxylon*
PS5962	MW530197	OUT 22	OUT 25	OUT 150	JC	12	P	1	Sordariomycetes	Xylariales	*Xylaria*
PS5964	MW530198	OUT 133	OUT 153	OUT 226	JC	12	P	1	Sordariomycetes	Xylariales	*Barrmaelia*
PS5965	MW530199	OUT 84	OUT 98	OUT 227	JC	12	P	0	Sordariomycetes	Ophiostomatales	*Raffaelea*
PS5966	MW530200	OUT 92	OUT 107	OUT 152	JC	12	P	0	Agaricomycetes	Corticiales	*Lindtneria*
PS5967	MW530201	OUT 111	OUT 127	OUT 181	JC	12	P	0	Sordariomycetes	Xylariales	*Annulohypoxylon*
PS5968	MW530202	OUT 92	OUT 107	OUT 152	JC	12	P	0	Agaricomycetes	Corticiales	*Lindtneria*
PS5969	MW530203	OUT 134	OUT 154	OUT 228	JC	12	P	0	Agaricomycetes	Polyporales	*Phanerochaete*
PS5970	MW530204	OUT 84	OUT 98	OUT 179	JC	12	P	0	Sordariomycetes	Ophiostomatales	*Raffaelea*
PS5971	MW530205	OUT 4	OUT 15	OUT 229	JC	18	P	0	Sordariomycetes	Hypocreales	*Fusarium*
PS5972	MW530206	OUT 135	OUT 155	OUT 230	JC	18	P	1	Sordariomycetes	Sordariales	*Stolonocarpus*
PS5973	MW530207	OUT 18	OUT 20	OUT 24	JC	18	P	0	Sordariomycetes	Xylariales	*Anthostomelloides*
PS5974	MW530208	OUT 84	OUT 98	OUT 145	JC	18	P	0	Sordariomycetes	Ophiostomatales	*Raffaelea*
PS5975	MW530209	OUT 136	OUT 156	OUT 231	JC	18	P	1	Sordariomycetes	Sordariales	*Chaetomium*
PS5976	MW530210	OUT 18	OUT 20	OUT 24	JC	18	P	0	Sordariomycetes	Xylariales	*Anthostomelloides*
PS5977	MW530211	OUT 126	OUT 144	OUT 213	JC	18	P	0	Sordariomycetes	Sordariales	*Chrysocorona*
PS5978	MW530212	OUT 110	OUT 126	OUT 180	JC	18	P	0	Sordariomycetes	Xylariales	*Xylaria*
PS5979	MW530213	OUT 132	OUT 151	OUT 224	JC	12	Z	1	Sordariomycetes	Xylariales	*Entosordaria*
PS5981	MW530215	OUT 22	OUT 25	OUT 178	JC	12	Z	1	Sordariomycetes	Xylariales	*Xylaria*
PS5983	MW530217	OUT 22	OUT 25	OUT 30	JC	12	Z	1	Sordariomycetes	Xylariales	*Xylaria*
PS5986	MW530219	OUT 131	OUT 157	OUT 232	JC	12	Z	1	Sordariomycetes	Coniochaetales	*Coniochaeta*

PS5988	MW530220	OUT 110	OUT 126	OUT 185	JC	12	Z	0	Sordariomycetes	Xylariales	*Xylaria*
PS5989	MW530221	OUT 18	OUT 20	OUT 24	JC	18	Z	1	Sordariomycetes	Xylariales	*Anthostomelloides*
PS5991	MW530223	OUT 22	OUT 25	OUT 30	JC	18	Z	1	Sordariomycetes	Xylariales	*Xylaria*
PS5992	MW530224	OUT 84	OUT 98	OUT 145	JC	18	Z	1	Sordariomycetes	Ophiostomatales	*Raffaelea*
PS5993	MW530225	OUT 22	OUT 25	OUT 30	JC	18	Z	1	Sordariomycetes	Xylariales	*Xylaria*
PS5994	MW530226	OUT 22	OUT 25	OUT 150	JC	18	Z	1	Sordariomycetes	Xylariales	*Xylaria*
PS5995	MW530227	OUT 84	OUT 98	OUT 179	JC	18	Z	0	Sordariomycetes	Ophiostomatales	*Raffaelea*
PS5996	MW530228	OUT 22	OUT 25	OUT 150	JC	18	Z	1	Sordariomycetes	Xylariales	*Xylaria*
PS5997	MW530229	OUT 133	OUT 153	OUT 226	JC	18	Z	0	Sordariomycetes	Xylariales	*Barrmaelia*
PS6804	MW530277	OUT 84	OUT 98	OUT 234	JC	24	A	1	Sordariomycetes	Ophiostomatales	*Raffaelea*
PS6801	MW530274	OUT 138	OUT 159	OUT 235	JC	24	A	0	Sordariomycetes	Sordariales	*Acrophialophora*
PS6802	MW530275	OUT 22	OUT 25	OUT 150	JC	24	A	0	Sordariomycetes	Xylariales	*Xylaria*
PS6803	MW530276	OUT 22	OUT 25	OUT 30	JC	24	A	1	Sordariomycetes	Xylariales	*Xylaria*
PS6805	MW530278	OUT 22	OUT 25	OUT 173	JC	24	A	1	Sordariomycetes	Xylariales	*Xylaria*
PS6806	MW530279	OUT 22	OUT 25	OUT 178	JC	24	A	0	Sordariomycetes	Xylariales	*Xylaria*
PS6807	MW530280	OUT 22	OUT 25	OUT 178	JC	24	A	0	Sordariomycetes	Xylariales	*Xylaria*
PS6808	MW530281	OUT 22	OUT 25	OUT 178	JC	24	P	0	Sordariomycetes	Xylariales	*Xylaria*
PS6809	MW530282	OUT 84	OUT 98	OUT 144	JC	24	P	0	Sordariomycetes	Ophiostomatales	*Raffaelea*
PS6811	MW530284	OUT 22	OUT 25	OUT 178	JC	24	P	0	Sordariomycetes	Xylariales	*Xylaria*
PS6812	MW530285	OUT 22	OUT 25	OUT 178	JC	24	P	0	Sordariomycetes	Xylariales	*Xylaria*
PS6814	MW530286	OUT 22	OUT 25	OUT 30	JC	24	P	0	Sordariomycetes	Xylariales	*Xylaria*
PS6815	MW530287	OUT 22	OUT 25	OUT 30	JC	24	P	0	Sordariomycetes	Xylariales	*Xylaria*
PS6816	MW530288	OUT 84	OUT 98	OUT 234	JC	24	P	0	Sordariomycetes	Ophiostomatales	*Raffaelea*
PS6817	MW530289	OUT 22	OUT 25	OUT 150	JC	24	D	0	Sordariomycetes	Xylariales	*Xylaria*
PS6818	MW530290	OUT 84	OUT 98	OUT 179	JC	24	D	0	Sordariomycetes	Ophiostomatales	*Raffaelea*
PS6819	MW530291	OUT 133	OUT 153	OUT 226	JC	24	D	0	Sordariomycetes	Xylariales	*Barrmaelia*
PS6820	MW530292	OUT 84	OUT 98	OUT 145	JC	24	D	0	Sordariomycetes	Ophiostomatales	*Raffaelea*
PS6821	MW530293	OUT 22	OUT 25	OUT 178	JC	24	D	0	Sordariomycetes	Xylariales	*Xylaria*
PS6822	MW530294	OUT 111	OUT 127	OUT 181	JC	24	D	1	Sordariomycetes	Xylariales	*Annulohypoxylon*
PS6824	MW530295	OUT 22	OUT 25	OUT 173	JC	24	D	0	Sordariomycetes	Xylariales	*Xylaria*
PS6825	MW530296	OUT 22	OUT 25	OUT 30	JC	24	D	1	Sordariomycetes	Xylariales	*Xylaria*
PS6826	MW530297	OUT 84	OUT 98	OUT 145	JC	24	D	1	Sordariomycetes	Ophiostomatales	*Raffaelea*
PS6827	MW530298	OUT 137	OUT 160	OUT 236	JC	24	D	1	Sordariomycetes	Sordariales	*Acrophialophora*
PS6829	MW530300	OUT 31	OUT 35	OUT 42	JC	24	D	0	Sordariomycetes	Xylariales	*Anthostomelloides*
PS6830	MW530301	OUT 22	OUT 25	OUT 173	JC	24	D	0	Sordariomycetes	Xylariales	*Xylaria*
PS6831	MW530302	OUT 84	OUT 98	OUT 145	JC	24	D	0	Sordariomycetes	Ophiostomatales	*Raffaelea*
PS6832	MW530303	OUT 31	OUT 100	OUT 138	JC	24	D	0	Sordariomycetes	Xylariales	*Anthostomelloides*
PS6833	MW530304	OUT 139	OUT 161	OUT 237	JC	24	D	0	Sordariomycetes	Xylariales	*Annulohypoxylon*
PS6834	MW530305	OUT 110	OUT 126	OUT 185	JC	24	D	0	Sordariomycetes	Xylariales	*Xylaria*
PS6835	MW530306	OUT 84	OUT 98	OUT 136	JC	24	D	0	Sordariomycetes	Ophiostomatales	*Raffaelea*
PS6837	MW530307	OUT 15	OUT 17	OUT 33	JC	24	D	0	Dothideomycetes	Botryosphaeriales	*Diplodia*
PS6839	MW530309	OUT 70	OUT 83	OUT 238	JC	24	D	0	Sordariomycetes	Hypocreales	*Fusarium*
PS6840	MW530310	OUT 84	OUT 124	OUT 176	JC	24	D	0	Sordariomycetes	Xylariales	*Annulohypoxylon*
PS6845	MW530313	OUT 131	OUT 157	OUT 239	JC	24	Z	0	Sordariomycetes	Coniochaetales	*Coniochaeta*
PS6846	MW530314	OUT 133	OUT 153	OUT 226	JC	24	Z	0	Sordariomycetes	Xylariales	*Barrmaelia*
PS6847	MW530315	OUT 22	OUT 25	OUT 150	JC	24	Z	1	Sordariomycetes	Xylariales	*Xylaria*
PS6848	MW530316	OUT 131	OUT 157	OUT 240	JC	24	Z	1	Sordariomycetes	Coniochaetales	*Coniochaeta*
PS6849	MW530317	OUT 127	OUT 145	OUT 221	JC	24	Z	1	Sordariomycetes	Xylariales	*Entosordaria*
PS6850	MW530318	OUT 127	OUT 145	OUT 221	JC	24	Z	1	Sordariomycetes	Xylariales	*Entosordaria*
PS6851	MW530319	OUT 84	OUT 98	OUT 179	JC	24	H	0	Sordariomycetes	Ophiostomatales	*Raffaelea*
PS6852	MW530320	OUT 84	OUT 98	OUT 179	JC	24	H	0	Sordariomycetes	Ophiostomatales	*Raffaelea*
PS6853	MW530321	OUT 112	OUT 128	OUT 182	JC	24	H	0	Sordariomycetes	Xylariales	*Xylaria*
PS6856	MW530322	OUT 84	OUT 124	OUT 176	JC	24	H	0	Sordariomycetes	Xylariales	*Annulohypoxylon*

PS6857	MW530323	OUT 112	OUT 128	OUT 241	JC	24	H	0	Sordariomycetes	Xylariales	*Xylaria*
PS6859	MW530324	OUT 84	OUT 124	OUT 176	JC	24	H	0	Sordariomycetes	Xylariales	*Annulohypoxylon*
PS6863	MW530326	OUT 84	OUT 124	OUT 176	JC	24	H	0	Sordariomycetes	Xylariales	*Annulohypoxylon*
PS6864	MW530327	OUT 84	OUT 98	OUT 145	JC	24	H	0	Sordariomycetes	Ophiostomatales	*Raffaelea*
PS6865	MW530328	OUT 22	OUT 25	OUT 187	JC	24	H	0	Sordariomycetes	Xylariales	*Xylaria*
PS6866	MW530329	OUT 22	OUT 25	OUT 178	JC	24	H	0	Sordariomycetes	Xylariales	*Xylaria*
PS6867	MW530330	OUT 115	OUT 162	OUT 242	JC	24	H	0	Sordariomycetes	Xylariales	*Annulohypoxylon*
PS6871	MW530331	OUT 22	OUT 25	OUT 150	JC	30	A	0	Sordariomycetes	Xylariales	*Xylaria*
PS6873	MW530333	OUT 140	OUT 163	OUT 243	JC	30	P	0	Sordariomycetes	Xylariales	*Entosordaria*
PS6875	MW530334	OUT 141	OUT 164	OUT 244	JC	30	P	0	Sordariomycetes	Xylariales	*Anthostomelloides*
PS6876	MW530335	OUT 22	OUT 25	OUT 178	JC	30	P	0	Sordariomycetes	Xylariales	*Xylaria*
PS6878	MW530336	OUT 84	OUT 98	OUT 145	JC	30	P	0	Sordariomycetes	Ophiostomatales	*Raffaelea*
PS6879	MW530337	OUT 84	OUT 98	OUT 145	JC	30	P	0	Sordariomycetes	Ophiostomatales	*Raffaelea*
PS6880	MW530338	OUT 22	OUT 25	OUT 30	JC	30	P	0	Sordariomycetes	Xylariales	*Xylaria*
PS6883	MW530340	OUT 22	OUT 25	OUT 178	JC	30	P	0	Sordariomycetes	Xylariales	*Xylaria*
PS6885	MW530342	OUT 31	OUT 100	OUT 138	JC	30	P	0	Sordariomycetes	Xylariales	*Anthostomelloides*
PS6887	MW530344	OUT 138	OUT 159	OUT 235	JC	30	P	0	Sordariomycetes	Sordariales	*Acrophialophora*
PS6888	MW530345	OUT 4	OUT 15	OUT 18	JC	30	P	0	Sordariomycetes	Hypocreales	*Fusarium*
PS6889	MW530346	OUT 110	OUT 126	OUT 180	JC	30	P	0	Sordariomycetes	Xylariales	*Xylaria*
PS6891	MW530347	OUT 22	OUT 25	OUT 150	JC	30	P	0	Sordariomycetes	Xylariales	*Xylaria*
PS6893	MW530348	OUT 22	OUT 25	OUT 30	JC	30	P	0	Sordariomycetes	Xylariales	*Xylaria*
PS6894	MW530349	OUT 18	OUT 20	OUT 161	JC	30	P	0	Sordariomycetes	Xylariales	*Anthostomelloides*
PS6898	MW530352	OUT 22	OUT 25	OUT 178	JC	30	H	1	Sordariomycetes	Xylariales	*Xylaria*
PS6900	MW530353	OUT 84	OUT 98	OUT 144	JC	30	Z	1	Sordariomycetes	Ophiostomatales	*Raffaelea*
PS6901	MW530354	OUT 22	OUT 25	OUT 150	JC	30	Z	0	Sordariomycetes	Xylariales	*Xylaria*
PS6902	MW530355	OUT 22	OUT 25	OUT 150	JC	30	Z	0	Sordariomycetes	Xylariales	*Xylaria*
PS6810	MW530283	OUT 142	OUT 165	OUT 245	JC	24	P	0	Eurotiomycetes	Chaetothyriales	*Cyphellophora*
PS6828	MW530299	OUT 141	OUT 164	OUT 244	JC	24	D	0	Sordariomycetes	Xylariales	*Anthostomelloides*
PS6838	MW530308	OUT 137	OUT 158	OUT 233	JC	24	D	0	Sordariomycetes	Sordariales	*Brachychaeta*
PS6862	MW530325	OUT 138	OUT 159	OUT 235	JC	24	H	0	Sordariomycetes	Sordariales	*Acrophialophora*
PS6872	MW530332	OUT 138	OUT 159	OUT 235	JC	30	P	0	Sordariomycetes	Sordariales	*Acrophialophora*
PS6881	MW530339	OUT 133	OUT 153	OUT 226	JC	30	P	0	Sordariomycetes	Xylariales	*Barrmaelia*
PS6884	MW530341	OUT 133	OUT 153	OUT 226	JC	30	P	0	Sordariomycetes	Xylariales	*Barrmaelia*
PS6886	MW530343	OUT 138	OUT 159	OUT 235	JC	30	P	0	Sordariomycetes	Sordariales	*Acrophialophora*
PS6896	MW530350	OUT 138	OUT 159	OUT 235	JC	30	H	1	Sordariomycetes	Sordariales	*Acrophialophora*
PS6897	MW530351	OUT 137	OUT 158	OUT 233	JC	30	H	1	Sordariomycetes	Sordariales	*Brachychaeta*
PS6903	MW530356	OUT 133	OUT 153	OUT 246	JC	30	Z	1	Sordariomycetes	Xylariales	*Barrmaelia*