Community ecology of New Guinea rainforest trees: Carbon storage, dynamics, and fungal endosymbionts

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ABSTRACT

This dissertation examines the community ecology of trees and fungal endophytes in the lowland rainforests of New Guinea. Forest inventory and soil nutrient data from a large permanent plot in addition to a chronosequence of regenerating forest were used to quantify carbon stocks and forest dynamics. These data were coupled with intensive sampling of foliar fungal endophytes at three sites to investigate local and regional variation in community composition of endosymbionts associated with a diverse sample of rainforest trees. The Wanang 50 ha forest dynamics plot is located in mature lowland wet rainforest in the Middle Ramu area of the Madang province in Northern Papua New Guinea. Established in 2009, the Wanang plot is the first spatially explicit, large-scale, long-term forest plot in Oceania aimed at studying forest dynamics and biodiversity through time. Chapter 1 investigated carbon storage in the Wanang forest dynamics plot and spatial and demographic variation in biomass. During the first census, every stem ≥1 cm in diameter at breast height (1.3 m above ground) was tagged, measured, and mapped to the nearest 10 cm. A subsequent species identification survey was carried out to associate every stem with a species or morphospecies concept. The first census at Wanang recorded a total 253,350 individual trees comprising 581 taxa, including 531 species and 50 morphospecies in 253 genera and 85 families. Our estimate of biomass

averaged 222.3 Mg per hectare (95% CI: 211.3-232.7). This finding agrees closely with two previous estimates derived from a distributed network of small forest plots, suggesting this figure is a reasonable approximation of aboveground biomass in lowland forests in New Guinea. We found that there was significantly more carbon held in small trees than is typically assumed for lowland rainforest and that there is substantial fine-scale spatial variation in forest carbon (range: 161.5-324.43 Mg/ha). New Guinea forests have substantially lower biomass than tropical rainforests on average (global average: 373.7 Mg/ha), possibly driven by frequent natural disturbance. Chapter 2 explored the extent to which species composition and basal area in Wanang forest is associated with topography and soil nutrients. Additionally, the reputation that New Guinea rainforests are unusually dynamic was tested for the first time by comparing mortality rates and indicators of forest regeneration stage to other tropical rainforests. Soil nutrients and topography account for 29% of variation in tree species composition but only 4% of variation in basal area among 20 m by 20 m quadrats at Wanang. Basal area and gap phase character was significantly different than that observed at a comparable forest dynamics plot at Barro Colorado Island, Panama. Comparison of basal area in the mature forest of the Wanang plot to an adjacent regenerating forest chronosequence produced an estimate that 6% of the Wanang plot was naturally disturbed in the past decade. Disturbance at Wanang, in addition to tree falls, includes frequent small land slumps that result in catastrophic mortality of trees in portions of forest up to approximately one hectare. Mortality rate was also higher in Wanang than has been reported for any other lowland rainforest. These results lend quantitative support to the notion that New Guinea lowland rainforests are exceptionally dynamic. This dynamic character likely plays a role in the lower than average biomass and low density of large trees at Wanang described in chapter 1. A large forest plot, such as Wanang, offers the opportunity for biodiversity discovery and studies of species interactions otherwise not possible. Chapter 3 focused on the relative importance of host specificity and dispersal limitation in structuring community composition of fungal endophytes in rainforest trees. Fungi were isolated from a diverse sample of eleven tree species representing five genera in the lowland rainforests of Papua New Guinea. Collections resulted in the culturing and sequencing of 2,079 fungal endophytes from three sites. Sequences of the internal transcribed spacer (ITS) region, a common fungal ribosomal barcode, were clustered into molecular operational taxonomics units (MOTUs) at 95% similarity. A total of 670 endophytes were collected from a single site in 2010, comprising 61 MOTUs. A slightly modified collection method carried out at three sites in 2011 resulted in isolation of 1,409 endophytes belonging to 191 MOTUs. Composition of endophytes varied by host species and genus both within individual sites and in aggregate. Spatial proximity of host trees did not correlate with similarity of endophyte composition within species, genera, or trees (i.e. regardless of taxonomy). The endophyte community both within sites and regionally was comprised of few abundant host generalist and many rare taxa. Regional turnover of fungal endophyte taxa was low, illustrated by sites separated by hundreds of kilometers having high similarity in endophyte community composition. These findings are consistent with the hypothesis that host specificity plays a larger role than dispersal limitation in structuring fungal endophyte communities. The findings of these three chapters provide a novel perspective of forest ecology in New Guinea that capitalized on the strengths of the long-term, large-scale plot setup of the Wanang forest dynamics plot. Additional plot censuses, focused studies of seed dispersal, and more intensive sampling of foliar endophytes will further elucidate the patterns described in this dissertation.

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PREFACE

Introduction and conclusion sections are included to provide background information for the overall study and an overview of the larger scientific context into which this dissertation fits. Each chapter is meant to stand alone as an individual scientific publication, but these chapters are united in this dissertation by their shared focus on topics related to community ecology of rainforest trees in New Guinea. Chapter one has been published in a slightly different form in Austral Ecology and the results presented in chapters two and three are intended to be published as discrete units after the submission of this dissertation. Any citations to a chapter within this dissertation were altered to include the chapter number (e.g. Vincent 2015, Chapter 1). Each of these publications will have one or more coauthors, so plural pronouns are used throughout, but as first author I am responsible for the content of each chapter.

INTRODUCTION

Tropical lowland rainforests are important global reservoirs of biodiversity and carbon in the form of woody biomass (Schimel 1995). Despite the widely recognized importance of tropical rainforests, we lack an understanding of fundamental aspects of rainforest ecology and biodiversity for the third largest tropical rainforest in the world covering the island of New Guinea (Mittermeier et al. 1998). The lowland rainforests of New Guinea are among the most expansive and species rich in the world (Sekhran and Miller 1995) and exhibit high rates of endemism including an estimated 60% of vascular plants on the island (Beehler 1993, Johns 1993). Although substantial research focused on a number of different taxa and ecological processes has been and is currently being carried out in New Guinea, the ecology of this unique and important forest remains dramatically understudied relative to those in Southeast Asia and the Americas. The establishment of the Wanang 50 ha forest dynamics plot, part of a worldwide network (Anderson-Teixeira et al. 2015) of spatially explicit forest dynamics plots (Condit 1997), opened the door for detailed studies of the ecology of lowland New Guinea rainforests.

New Guinea has among the highest rates of deforestation and forest degradation in the world due to timber extraction and land conversion (Shearman 2008, Shearman et al. 2009, Bryan et al. 2010a). Proposals of global programs to incentivize forest preservation, such as the United Nations reducing emissions from deforestation and forest degradation (REDD) program, have produced great excitement globally, particularly in developing nations like Papua New Guinea that may benefit monetarily from preserving their forests. Although the implementation and operation of these projects will not be trivial due to the complexities of each particular sociocultural context (Henning 2014), accurate carbon estimates are foundational to the actualization of any scheme to monetize benefits from forest preservation. Extensive research on carbon storage in other tropical forests has been carried out in distributed networks of small plots (Malhi et al. 2002, Phillips et al. 2004), large plots (Chave et al. 2001, Chave et al. 2003), or by remote sensing (Asner et al. 2010, Saatchi et al. 2011). Each of these approaches have unique strengths and potential sources of bias in terms of the ability to describe spatial variation or extrapolate and generalize carbon estimates across a forest type or landscape (Keller et al. 2001, Chave et al. 2003, Mitchard et al. 2014). Estimates of aboveground carbon storage are typically produced using allometric equations to estimate aboveground biomass (Chave et al. 2001), as destructive sampling is typically not possible. Although these equations have weaknesses, greater accuracy has been found in biome specific equations (Chave et al. 2005), and through incorporation of tree height (Feldpausch et al. 2011, Feldpausch et al. 2012) and wood density (Chave et al. 2005).

Previous estimates of carbon storage in New Guinea lowland rainforests are divergent (Bryan et al. 2010b, Fox et al. 2010). These estimates were based on a network of small plots (≤1 ha) and are potentially vulnerable to bias due to non-random plot placement (Fox et al. 2010). Although the Wanang 50 ha plot represents just one observation, albeit a large one, this contrasting approach has the potential to reveal fine-scale spatial (Chave et al. 2003) and demographic aspects of carbon storage that are not observable in smaller plots. Tree size distributions and thus carbon accumulation and storage in forests are inherently governed by disturbance and dynamics. A more dynamic forest, such as New Guinea rainforests (Johns 1986), should have fewer large trees, a greater proportion of biomass held in small trees, and lower biomass overall relative to other lowland rainforests. Chapter one of this dissertation examines spatial and demographic aspects of carbon storage in New Guinea rainforests. The estimate of carbon produced in chapter three was then compared to previous carbon estimates from New Guinea and other forests around the world to clarify lowland forest carbon estimates and place New Guinea rainforests in a global context.

The dynamics and disturbance regimes of tropical rainforests are better understood in Asian and American forests than in New Guinea (Swaine et al. 1987, Whitmore 1991, Condit et al. 1999). Estimates of population level parameters for New Guinea rainforests are few (Arihafa and Mack 2013) and most descriptions of disturbance and forest dynamics on the island are qualitative (e.g. Johns 1986). Although there is little quantitative evidence to support the notion that New Guinea rainforests are unusually dynamic, geological studies point in this direction (Simonett 1967, Loffler 1977, Garwood et al. 1979). It has been suggested that the instability of New Guinea soils and the prevalence of landslips, slumping terrain, and surface soil wash could significant sources of abiotic mortality that are not common in other regions. Published mortality rates of tropical lowland rainforests (Condit et al. 1995, Condit et al. 1999, Shen et al. 2013) surveyed using identical methods (Condit 1997) provide a ready comparison of mortality rates globally. These published estimates include observations of the impact of catastrophic events, such as major drought (Condit et al. 1995), on tree mortality rate. Intrinsic disturbance regimes, partially responsible for shaping tree mortality rates, are fundamental environmental determinants of carbon storage and forest succession (Vieira et al. 2004, Feeley et al. 2007, Doughty et al. 2015). Previous research on forest succession at Wanang (Whitfeld et al. 2012a, Whitfeld et al. 2014) established a chronosequence of forest plots adjacent to the Wanang 50 ha plot, ranging from three to greater than fifty years since human disturbance. These plots, comprised of mature forest and regenerating post agricultural fields, have been shown to vary in species composition, basal area, and stem density in accord with predictions and observations of forest succession (Chazdon et al. 2007, Chazdon 2008, Letcher and Chazdon 2009, Whitfeld et al. 2014).

A mature forest is not simply a collection of large, old trees but rather a mosaic of differently aged patches in different states of regeneration following disturbance (Whitmore 1991, Chambers et al. 2013, Chazdon 2014). The analogy between portions of mature forest recovering after disturbance and secondary forest regenerating after logging or cultivation suggests that tree growth and species composition may change in a similar manner over time, should dispersal not be a limiting factor (Holl 1999) or vegetative reproduction (Lawton and Putz 1988) not be dramatically different. Further, similarity in successional stage should be corroborated by co-occurrence of abundant tree species with high habitat fidelity (Dufrêne and Legendre 1997, De Cáceres et al. 2010), such as light-demanding pioneer species or shate-tolerant species. Although this comparison between a chronosequence and mature forest would shed light on forest age and frequency of disturbance, it lends no explanation to observed variation in basal area and species composition in mature forests.

While environmental variation has been shown to shape species distributions in tropical rainforests (Harms et al. 2001, Gunatilleke et al. 2006, John et al. 2007, Chuyong et al. 2011, Baldeck et al. 2012, De Cáceres et al. 2012), much less research has focused on the ways in which environmental variables (e.g. topography, soil nutrients) shape biomass distributions (Laurance et al. 1999, Clark and Clark 2000, Paoli et al. 2008) and results are conflicting (Unger et al. 2012). In particular, associations between basal area or forest biomass and environmental variation, such as topography and soil nutrients, have not been explored. Although environmental variation is certainly influential, biotic interactions such as seed dispersal have an important role in shaping rainforest communities (e.g. Harrison et al. 2013). A possible example of important biotic interactions that shape rainforest tree distributions and is unique in New Guinea is the role of the cassowary, as keystone seed disperser. Many large seeded trees can only be dispersed by cassowaries (Mack and Wright 2005), leading to clumped distributions of large seeded trees resulting from their diet preference and behavior (Mack 1995). Chapter two of this dissertation explores the association between environmental variables, topography and soil nutrient concentrations, and variation in basal area and tree species composition in lowland rainforest. Additionally, mortality rate, forest age, and regeneration stage are investigated and compared to another tropical forest to test if New Guinea rainforests are exceptionally dynamic.

Another biotic attribute of rainforest communities relevant to the survival and growth of trees is the omnipresence of a multitude of interactions with fungi, potentially beneficial (Peay et al. 2010) or pathogenic (Packer and Clay 2000, Bell et al. 2006). The distribution of fungal diversity remains poorly understood, particularly in tropical systems (Peay et al. 2013). Among the most inconspicuous fungal taxa, fungal endophytes are ubiquitous plant endosymbionts (Arnold 2007), existing in plant tissues without causing outward signs of infection (Petrini 1991). Although it is clear that endophytes are very diverse (e.g. Arnold et al. 2000) and have been shown anecdotally to be important in mediating some plant-insect interactions (Clay 1988), regulating plant pathogen damage (Arnold 2003) and conferring special habitat use abilities to some plants (Márquez et al. 2007, Rodriguez et al. 2008), our knowledge of community level patterns is more limited. Studies of the processes structuring fungal communities are essential to estimates of fungal diversity (Blackwell 2011) and our basic understanding of the community ecology of fungal endophytes. Studies of soil fungi (Gilbert and Sousa 2002, Peay et al. 2013) and epiphytic fungi (Gilbert et al. 2007, Kembel and Mueller 2014) have shown strong patterns of host specificity, with fungal community composition and species richness tied to host composition (Tedersoo et al. 2014, Prober et al. 2015). Results from studies of foliar fungal endophytes tend to suggest a host generalist strategy is predominant in these taxa (Higgins et al. 2011, Higgins et al. 2014) and that communities are highly influenced by host growth environment (Arnold and Herre 2003, Pan et al. 2008), showing strong turnover in relation to distance between communities (Arnold et al. 2000) or ecological gradients (Zimmerman and Vitousek 2012). Although several studies of fungal endophyte diversity and community variation have been carried out in the tropics (e.g. Arnold et al. 2001, Higgins et al. 2014) or designed to incorporate distantly related plant hosts (e.g. U'Ren et al. 2012), we lack an understanding of the influence of endophyte-host affinity and host phylogeny on endophyte community composition in diverse vegetation. Likewise, spatial analyses of variation in endophyte composition have covered very large scales and spanned dramatic ecological gradients (U'Ren et al. 2012, Zimmerman and Vitousek 2012), leaving patterns of small-scale variation and beta diversity in the absence of environmental variation unexplored. These outstanding questions relating to the community ecology of tropical rainforest endophytes represent major gaps in our knowledge of this inconspicuous (Arnold et al. 2000) and potentially beneficial (Higginbotham et al. 2013) reservoir of biodiversity. Chapter three of this dissertation explores local and regional variation in endophyte community composition in relation to plant hosts and spatial proximity between samples. These patterns were investigated to gain insight on the relative importance of host specificity and dispersal limitation in structuring fungal endophyte communities in diverse vegetation.

CHAPTER 1

Forest carbon in lowland Papua New Guinea: local variation and the importance of small trees

Introduction

Deforestation and forest degradation are one of the greatest sources of carbon emissions (~17%) contributing to anthropogenic climate change (Stern 2007). The United Nations initiative to reduce emissions from deforestation and degradation (REDD+) aims to reward nations and stakeholders for forest carbon storage and sequestration (Angelsen 2008). REDD+ accounting requires accurate estimation of carbon storage under different land use options and associated changes in emission or sequestration due to changes in land use (Gibbs et al. 2007). Large variation among regions (e.g. sub-Saharan Africa estimated at 80 Mg C/ha, Latin America at 99 Mg C/ha, or Asia and Oceania at 137 Mg C/ha) necessitates local estimates of forest carbon (Saatchi et al. 2011).

Located in the Southwest Pacific Ocean directly north of Australia, the island of New Guinea is the world's largest tropical island and holds the third largest expanse of tropical forest in the world (Mittermeier et al. 1998). Composed of the eastern half of the island of New Guinea and surrounding islands, Papua New Guinea (PNG) is a heavily forested country with mainland forests totaling 33 million hectares of which 19 million hectares are lowland rainforest (Shearman 2008, Shearman and Bryan 2011). This important carbon pool is remarkably intact relative to other equatorial forests but threatened by a deforestation rate of 1.4% per annum (Shearman 2008). Forest carbon estimates for PNG have been contentious. Ground-based forest inventories have produced estimates of lowland rainforest carbon ranging from 111.34 Mg C/ha (Bryan et al. 2010a) and 120.8 Mg C/ha (Fox 2010) to 169.9 Mg C/ha (Bryan et al. 2010b) whereas estimates from remote sensing ranged 147-153 Mg C/ha (Saatchi et al. 2011). Scaling such variation to the estimated 18.65 million hectares of lowland rainforest in PNG (Shearman and Bryan 2011) suggests that massive uncertainty is associated with the regional carbon stock. Differing estimates could have great economic consequences should monetary investment become available through REDD+ initiatives. Differing carbon estimates might either have a biological explanation or be attributed to methodological differences among studies or errors (Bryan et al. 2010a, Bryan et al. 2010b, Fox 2010, Fox et al. 2011).

Forest dynamics, patterns of recruitment and mortality over time that result in turnover among individual trees, are also an important consideration. PNG forests are alleged to be more highly dynamic than other tropical forests (Johns 1986) as a result of extreme topography, unstable terrain, volcanic activity, frost, flood, fire, and a substantial history of human use. (Johns 1986, Filer 2009, Fox et al. 2011). Such disturbances result in a heterogeneous landscape and a fine-grained matrix of spatial variation in forest cover where recently disturbed areas contain greater numbers of small, young trees than adjacent areas. We would expect more highly dynamic forests to store less carbon overall, with greater spatial variability and proportionally more carbon in small trees, compared to less dynamic forests. Indeed, studies have identified regional differences in aboveground biomass associated with tree stature and density of large trees (Feldpausch et al. 2012, Slik et al. 2013).

Where PNG forests fit in this global picture remains an open question. Considering the floristic affinity with Australia, carbon stocks might be expected to resemble the wet tropical forests of Northeast Queensland that appear to be exceptionally high compared to the global average (Bradford et al. 2014, Murphy et al. 2014). Carbon estimates in PNG have been based on forest inventory data using allometric equations and measurements of tree diameter at breast height (DBH), wood density, and height from arrays of vegetation plots (Bryan et al. 2010b, Fox 2010). Plots less than 1 ha in size are logistically practical but may fail to capture local spatial variation in carbon storage across the landscape due to topographical heterogeneity or forest dynamics (Bryan et al. 2010b, Fox 2010). Forest inventory methods may also vary from plot to plot and simplifying assumptions can contribute further error to carbon estimates. For example, estimates often rely on species-specific wood densities gathered from global databases but intraspecific variation in wood density among regions makes measurements incorporating local estimates of wood density more accurate (Feldpausch et al. 2012). In addition, often only large trees (>10 cm DBH) are directly measured, leaving small trees (< 10 cm DBH), woody vines, below ground biomass, and non-living biomass to be estimated as a proportion of large tree biomass. Although there is evidence of regional variation in the proportion of carbon in different size classes, local estimates often assume proportions based on studies from distant regions (Chave et al. 2005). In PNG, where it is possible that small trees are more frequent than in comparable forests elsewhere, the common assumption that small tree biomass (< 10cm DBH) is equivalent to 5% of large tree biomass(Lugo and Brown 1992, Chave et al. 2003), may not be applicable.

This study aims to characterize local variation in carbon storage in PNG lowland rainforests and to identify possible sources of variation among previous estimates. We used a single large (50 ha) forest plot with measurements of all trees over 1cm DBH to examine local spatial variation and the contribution of small trees to aboveground forest carbon. The large size of the plot provides a carbon estimate that is robust to local spatial variation and which is useful for interpreting differences among previous estimates based on smaller plots. Extensive measurement of small trees (< 10 cm) further enabled the discovery of a substantially greater contribution of small trees to overall forest carbon than was known from forests elsewhere. Incorporating this new information improves the overall accuracy of estimates for PNG.

Methods

Study site & data

The Wanang Forest Dynamics Plot (FDP) was established in 2009 in lowland rainforest in the Middle Ramu region of Madang Province, Papua New Guinea (PNG). The plot is gridded to 20 m by 20 m quadrats according to protocol developed by the Center for Tropical Forest Science (Condit 1995). Topography is characterized by a riparian area along the eastern edge of the plot, sloping steeply to a plateau on the western edge. Elevation ranges from approximately 90 to 190 m above sea level. Climate is aseasonal, averaging 25.8° C and 4,000 mm precipitation with over 125 mm of precipitation in each month. Rainfall and temperature data were collected at the Swire PNG rainforest project field station located adjacent to the 50 ha plot. Rainfall data were collected from June 2011 to March 2014, with 25 complete months of data collected during this period. The temperature figure reported is a mean average of daily temperatures measured hourly from June 17, 2010 to April 24, 2012. Soils are a shifting mosaic of Entisols, Inceptisols, and Alfisols, depending on time since soil disturbance (Turner, B.L. personal communication). Vegetation is classified as lowland tropical wet mixed evergreen forest (Paijmans 1976) with no evidence of recent human disturbance.

During 2009 through 2013, every woody stem >1cm DBH in the Wanang FDP was tagged, DBH measured, mapped, and identified to species. The 50 ha plot included 277,550 stems. In total, we recorded 581 taxa including 50 unnamed morphospecies and 531 named species. Morphospecies refer to undescribed taxa for which there may be uncertainty in identification beyond the genus level. The dataset also included 13,811 trees that could not be assigned to a morphospecies or species.

Wood density

Wood specific gravity was obtained either from a destructively sampled forest plot at Wanang for 208 species (Whitfeld 2011b) or publically available databases in the case of 81 species (Eddowes 1977, Chave et al. 2005, Alonk 2009). In the case of taxa lacking published measurements, simple averages of wood gravity were calculated at the levels of genus and family from compiled wood density data. For example *Aglaia brownii* did not have a wood specific gravity value in our data set, so we assumed phylogenetic conservatism and used the average *Aglaia* wood specific gravity estimate. Likewise, if no genus level data were available, a family level average was used. If no family level data were available, a community-wide average for Wanang forest species was used. Wood specific gravity values were assigned as specifically as compiled information and taxonomic identifications allowed, assuming phylogenetic conservatism of wood specific gravity. We assigned wood specific gravity values to 306 species, 205 taxa were assigned a genus average value, 27 taxa were assigned a family average value, and the community average wood specific gravity was used for 41 taxa lacking taxonomic information.

Above ground biomass estimation

The allometric equation for tropical wet forests derived by Chave et al. (2005) was used to estimate aboveground living biomass:

$$\text{AGLB (in kg)} = r^{\,(-1.239 + 1.980\ \ln(D) + 0.207(\ln(D))2 - 0.0281(\ln(D))3)}$$

where r is wood specific gravity (g/cm^2) and D is diameter (cm). Averages and 95% confidence intervals for AGLB and stem density were produced by 1,000 bootstraps on one-hectare sub-plots to provide information on spatial variation in biomass (sensu Ngo et al. 2013). Species-level biomass estimates were obtained on a per hectare basis by dividing total biomass within a species by the total area sampled in hectares. We used a conventional conversion factor of 0.5 to convert from AGLB to carbon (Malhi et al.

2004, Fox 2010). Root biomass was assumed to be 12% of AGLB following Bryan et al. (2010a). All calculations were performed in R v2.15. Bootstrap averages, confidence intervals were calculated in the package ‘boot’.

The relationship between AGLB and plot topography was explored using ordinary least squares regression. Topographic variables were calculated from plot survey data using the CTFS R package. Relationships between elevation, slope, convexity of quadrats and AGLB were explored in separate regression models. AGLB was log-transformed for normality and homoscedasticity. Significance was evaluated for each linear model at α=0.05 and the explanatory value of models was assessed based on evaluation of the portion of variance explained (r^2). A two-tailed t-test compared per-hectare small tree biomass (< 10 cm) based on measurements of individuals >1 cm to estimates based on the common assumption that small trees constitute 5% of large tree biomass.

Extrapolations of AGLB to the entirety of the Wanang Conservation Area were also made. We obtained an estimate for the 10,770 ha area by the multiplying our per hectare biomass estimate by 10,770. We also multiplied the most extreme values among the 50 hectare subplots by the total area to illustrate possible skew in extrapolated estimates should extremely high or low biomass per hectare be assumed. Extrapolated values were also multiplied by 0.5 to estimate aboveground carbon for Wanang.

Results

Biomass and carbon storage

We estimated 222.3 (95% CI: 211.3-232.7) Mg/ha of aboveground living biomass (111.2 Mg C/ha) in trees >1 cm DBH (Table 1.1). Compared to other tropical lowland rainforests globally, our estimate suggests that PNG has relatively low biomass on a per hectare basis (Figure 1.1). Our estimate of 222.3 Mg/ha is much lower than a global mean estimate (373.7 Mg/ha) as well as estimates for lowland rainforests of the Americas (287.9 Mg/ha), Asia (393.24), Africa (393.3) (Slik et al. 2013) and Australia (513.6 Mg/ha) (Bradford et al. 2014, Murphy et al. 2014) (Figure 1.1).

We found small trees (1-10 cm DBH) averaging 4,993 stems per hectare (4,839-5,135 95% CI) and accounting for 14.14 Mg/ha AGLB (13.7 -14.5% CI), or 6.4% of total AGLB in the plot as a whole (Table 1.2). The majority of AGLB in the Wanang plot was in the 10-70 cm DBH size class (165.01 Mg/ha (157.2-172.6 95% CI), making up 74.2% of total biomass (Table 1.2). There were rather few very large trees (>70cm) in the Wanang plot, averaging only 7 per hectare (6-8 95% CI, Table 1.2). These few trees contributed disproportionately to AGLB, accounting for 43.11 Mg/ha (37.2-48.9 95% CI) and 19.4% of total AGLB (Table 1.2). The top ten tree species in terms of biomass represented 37.76% of the total (Table 1.3). The most abundant tree in our plot, *Pometia pinnata*, accounted for 13.73% while *Intsia bijuga*, a valuable timber species, accounted for 4.36%. The top ten are among the few reaching sizes >70cm at Wanang and trees this large are rather rare (Table 1.3, Figure 1.2).

Local variation and small trees

Variation in biomass among 50 contiguous one hectare subplots was considerable and ranged from 161.5 to 324.43 Mg/ha (Figure 1.3). Spatially auto-correlated patterns of variation in AGLB were not evident (Figure 1.4), nor was AGLB correlated with elevation, slope, or convexity.

Estimating AGLB of small trees using the conventional assumption of 5% of trees < 10cm DBH yielded an average of 10.4 Mg/ha and was significantly less than our measured value ($t = 11.97$, $df = 49$, $p < 0.0001$). Few studies have reported comparable biomass estimates including trees as small as 1 cm DBH (Table 1.4). Tropical Asian and American forests appear to exhibit considerable variation in the percentage of total biomass represented by small trees, ranging from 2.74% in Panama (Kirby and Potvin 2007) to 7.78% in Yasuni, Ecuador (Valencia et al. 2009).

Carbon extrapolation

Our best estimate of above-ground biomass for the 10,770 ha Wanang Conservation Area was 2,394,000 Mg. This amount of biomass is equivalent to 1,197,000 Mg of carbon. Depending on assumptions, estimates ranged from 870,000 to 1,747,000 Mg C (Table 1.5).

Discussion

Although Papua New Guinea is known to support significant expanses tropical forest, studies of PNG forest biomass and carbon storage are relatively few (Edwards and Grubb 1977, Bryan et al. 2010a, Bryan et al. 2010b, Fox et al. 2010, Fox et al. 2011). Previous estimates for lowland PNG rainforest AGLB are divergent (Bryan et al. 2010b, Fox et al. 2010), either agreeing closely with our estimate (Fox et al. 2010, 222.8 Mg/ha, Bryan et al. 2010a, 222.68 Mg/ha), or being much higher than ours, greater than the American estimate, and nearer to the global mean (Bryan et al. 2010b, 339.75). Assuming 12% root biomass, as did Bryan et al. (2010b), only elevated our estimate to 249.01 Mg/ha (124.5 Mg C/ha, Table 1.1). We sought to improve on prior estimates by measuring local variation and the contribution of small trees to overall forest biomass. The inclusion of species-specific and site-specific wood density measures with a large, detailed, and spatially explicit dataset allowed us to examine spatial heterogeneity and demographic patterns in PNG rainforest carbon as never before. Our results demonstrate that the estimates of Fox et al. (2010) and Bryan et al (2010a) are robust to assumptions about wood density, small trees, and spatial variation. We did not evaluate the accuracy of allometric equations in estimating forest biomass or include tree height as a parameter but our findings do improve the accuracy of PNG lowland forest biomass estimates and help to situate PNG forests in a global context.

Comparing estimates

This study, in agreement with Fox et al (2010) and Bryan et al (2010a), found that PNG forest biomass is lower than the global average for lowland rainforests (Fig 1.1). The question is how much lower. The average for the Wanang plot (Table 1.2) closely matches that of Fox et al. (2010) and Bryan et al. (2010a) and is significantly lower than that of Bryan et al 2010b, who included the Middle Ramu in their study. The Middle Ramu estimate from Bryan et al. 2010b was obtained from a single destructively sampled hectare (Whitfeld et al. 2012b) located about 15 km from the Wanang FDP and in similar terrain. Considering that the Middle Ramu plot reported in Bryan et al. (2010b) was substantially more massive than the Wanang FDP average (320 Mg/ha compared to 222.3 Mg/ha total biomass), perhaps the divergent estimates of different authors might be explained by a bias toward locating the plot in more massive forests. Re-analyzing data from the 1 ha destructively sampled plot (Whitfeld et al. 2012b) using the method of Bryan et al. (2010b) produced an estimate of 294.2 Mg/ha. This figure is much larger than our average per hectare AGLB estimate of 222.3, but does fall within the range of 161.5 to 324.4 Mg/ha within the 50 ha FDP. This large value relative to our plot average illustrates the possible bias introduced by limited spatial sampling to characterize forest biomass.

The lesser biomass of PNG forests compared to the global average could be due to their dynamic nature (Swaine and Whitmore 1988). Although there have been no long-term studies of forest dynamics in PNG, recent observations suggest that PNG forests could have higher turnover than other forests around the world (Vincent, J.B., unpublished data, Chapter 2). Forests with higher rates of tree turnover resulting from disturbance and successional processes will have greater spatial variability in structure and a higher proportion of biomass represented by small trees.

By including measurements of small trees, species-specific wood density measures, and local spatial variation our estimate provides a unique perspective into aboveground carbon storage in PNG. Although our estimate applies only to lowland primary rainforest, this forest type covers a vast area of 18.65 million hectares in PNG (Shearman and Bryan 2011). Extrapolation to such scales calls for increased precision in biomass estimates. Our results show that consideration of spatial heterogeneity, forest dynamics, and species-specific wood density measures can improve the accuracy of carbon estimates.

Small trees

Forest succession theory predicts that a more dynamic forest will contain a higher proportion of biomass in small trees (Chazdon 2008). Shaped by demographic and successional processes, early secondary forests have been shown to store up to 20% of carbon in trees < 10 cm DBH compared to 5% in mature forests (Lugo and Brown 1992, Chave et al. 2003, Fox 2010). It is an oversimplification to regard pristine forests as uniform in structure when in fact they represent a mosaic of successional patches according to the frequency, intensity and scale of natural disturbances over time. In lowland PNG, forest succession is associated with increasing biomass, species richness, phylogenetic diversity and functional complexity (Whitfeld et al. 2012a).Variation in topography, soils, climate and biotic interactions can influence disturbance regimes that are further propagated over time to spatial heterogeneity in stem size distributions and forest biomass. Undercutting of trees by rapid erosion, mud flows, and slumps during periods of heavy rainfall may be a particularly important source of disturbance at Wanang where uplifted oceanic sediments form an unstable and highly dissected terrain of ridges, coves, and ravines across much of the PNG lowlands (Loffler 1977). These observations are consistent with the idea that mature forests in PNG generally store a higher proportion of carbon in small trees than most lowland tropical rainforests.

Plot-based vegetation methods inevitably set a minimum diameter for stem tree measurements and, commonly, only trees > 10 cm DBH are measured. The popular assumption that biomass of trees < 10 cm DBH is equal to 5% of large tree biomass underestimated Wanang tree biomass by 4 Mg/ha. This error may seem small but extrapolation could propagate a minor discrepancy across millions of hectares and grossly underestimate forest carbon at larger scales. On the other hand, our assumptions about wood density may incorrectly estimated small tree biomass. Wood density is known to vary within trees (e.g. Wiemann and Williamson 1989, Swenson and Enquist 2008) and may also change with ontogeny. Destructive sampling of small trees will be required to evaluate potential bias in wood density assumptions with respect to size. The 5% assumption drawn from forests in other regions may be a reasonable simplifying assumption but not in lowland PNG. The only other quantification of small trees in PNG found 3% of aboveground biomass in small trees in a 0.24 ha mid-montane forest plot (Edwards and Grubb 1977) which is a rather small sample and certainly does not apply to lowland forests. Large trees are obviously the most influential as they store the majority of carbon (Slik et al. 2013) but it is important not to overlook regional variation in the contribution of small trees to overall biomass as it affects carbon accounting. Our study demonstrates that, despite small trees playing a relatively minor role in carbon storage, extrapolations are rather sensitive to assumptions about the distribution of biomass among tree size classes.

Local heterogeneity

Variation observed among subplots within 50 ha of contiguous forest (Figure 1.3) supports the concept of mature forests as mosaics of forests in different phases of succession and biomass accumulation (Franklin et al. 2002, Coomes and Allen 2007). These findings demonstrate the importance of plot size in accurately assessing carbon storage (Chave et al. 2001, Chave et al. 2003). Nascimento and Laurance (2001) suggested that a relatively small number of satellite plots can accurately assess forest carbon and previous studies have focused on the importance of site selection to adequately represent regional variation (Bryan et al. 2010b). However we would argue that local variation could be just as important as regional variation. Plot sites are often chosen based on the presence of large trees and undisturbed appearance ("old-growth character") that may result in selection of sites exhibiting high biomass relative to surrounding forest (Phillips et al. 2002). Measurements obtained from small plots, when extrapolated to larger scales, can dramatically affect estimates of carbon at the landscape level (Table 1.5). Large plots minimize bias and improve accuracy by integrating across successional stages, topography, and other sources of local heterogeneity in biomass accumulation (Chave et al. 2003). Extreme heterogeneity of AGLB at Wanang (Figure 1.2) suggests that the randomized placement of multiple small plots could be the most practical solution to avoiding bias. We would further argue that the improved accuracy gained from a large plot is marginal compared to the cost of a large census. Instead, we recommend effort to avoid bias in site selection and a sufficient number of small plots to approximate a landscape-level average.

Limitations

Our study examined some of the methodological limitations of prior work including plot size, lack of small tree measurements, and wood density assumptions. Further limitations that also apply to our own estimates include failure to incorporate height measurements or to validate the assumption that carbon represents 50% of AGLB (Martin and Thomas 2011). Inclusion of height measurements in allometric equations has been shown to significantly improve biomass estimates (Feldpausch et al. 2012). By definition, a single large forest plot does not capture regional variation and thus our estimates are not representative for PNG lowland forests as a whole but our findings suggest a number of steps that can be taken to improve regional estimates based on smaller plots. These include randomized site selection, increasing the contribution of small trees to overall biomass above 5%, and employing locally appropriate wood density information.

Carbon extrapolation

We extrapolated our Wanang estimate and AGLB estimates from Fox et al. 2010 and Bryan et al. 2010 for the sake of comparison. Carbon in the 10,770 ha Wanang Conservation Area forest was estimated at 1.2 million Mg. Had we endeavored to obtain a value by approximation from the literature, our estimate would have varied by 50%, ranging from 1.2 to 1.8 million Mg (Table 1.5). Likewise, considering the spatial heterogeneity of Wanang forest biomass, we could have derived an estimate anywhere from 0.8 to 1.8 million Mg depending on which hectare we sampled.

As with any extrapolation, scaling estimates of forest biomass per hectare to a landscape level will propagate errors. The extrapolations required by schemes to monetize carbon and incentivize forest preservation for the purposes of reducing global atmospheric carbon concentrations should be regarded with great caution. Our results show substantial biomass variation in a contiguous forest that many would assume to be homogenous. Although large plots like Wanang are impractical for REDD+ implementation, we suggest that greater consideration be given to local spatial heterogeneity. Should projects such as REDD+ move past the pilot phase and into wider implementation it will be important to consider how errors associated with carbon estimates may impact economic reality.

Conclusions

Carbon estimates are ideally generalizable across the landscape. The largest and most detailed measurement of a continuous forest in Melanesia suggests that PNG lowland rainforests contain less biomass per hectare than lowland tropical rainforests on average. This pattern could be due to the elevated disturbance and dynamism of lowland PNG forests, an explanation that has been suggested in the literature but remains untested. A recensus of the Wanang plot is needed to examine this possibility.

We also found a higher proportion of biomass in small trees than is typically assumed for lowland tropical rainforests. Our findings suggest that the carbon estimates reported by (Bryan et al. 2010a, Fox 2010) are more accurate than those of (Bryan et al. 2010b). We conclude that randomized sampling, appropriate wood density information, and the contribution of small trees should be considered to ensure that estimates are as accurate as possible.

Table 1.1

Comparison of PNG lowland primary forest biomass estimates. Bryan et al. estimate was extracted from lowland forest sites included in their study. Bryan et al.'s, detailed calculation and plot methods were unavailable. Italics for inferred value calculated from description of methods in literature.

Table 1.1

Biomass (Mg/ha)	**Our estimate**	**Fox et al. 2010**	**Bryan et al. 2010b**
Large trees (>10cm)	208.19	212.6	NA
Small trees (< 10cm)	14.14 (measured)	10.2 (calculated)	NA
AGLB	222.33	222.8	*339.74*
Roots (12% AGLB)	26.68	*26.74*	*46.33*
Total	249.01	*249.536*	*386.11*
Area studied	50 ha	10 ha	NA

Table 1.2

Distribution of stems and biomass across size classes.

Table 1.2

Size Class	**Stems ha^{-1} [95% CI]**	**AGLB (Mg ha^{-1}) [95% CI]**	**% AGLB**
1-10 cm	4993 [4839-5135]	14.14 [13.70-14.51]	6.37
10-70 cm	511 [495-526]	165.01 [157.22-172.64]	74.23
≥70 cm	7 [6-8]	43.11 [37.17-48.90]	19.40

Table 1.3

Ten species in 50 ha of Wanang forest with the highest aboveground living biomass (AGLB) and the percent of total biomass.

Table 1.3

Species (family)	AGLB (Mg ha^{-1})	% AGLB ha^{-1}
Pometia pinnata (Sapindaceae)	30.52	13.73
Mastixiodendron pachyclados (Rubiaceae)	9.71	4.37
Intsia bijuga (Fabaceae)	9.70	4.36
Celtis latifolia (Cannabaceae)	8.33	3.75
Pimelodendron amboinicum (Euphorbiaceae)	6.33	2.85
Gnetum gnemon (Gnetaceae)	4.86	2.19
Neonauclea obversifolia (Rubiaceae)	4.51	2.03
Vitex cofassus (Lamiaceae)	3.47	1.56
Chisocheton ceramicus (Meliaceae)	3.35	1.50
Erythrospermum candidum (Salicaceae)	3.18	1.43

Table 1.4

Comparison of biomass in trees < 10 cm DBH. Results of our study are presented in the first row along with other studies that have measured biomass in small trees. Valencia et al. (2009) reported results from two censuses of the same plot.

Table 1.4

≤10 cm DBH AGLB (Mg/ha)	% total AGLB	Stems ha^{-1}	Location	Source
14.14	6.37%	5,510	PNG	
11.58	4.22%	4,092	Panama	(Chave et al. 2003)
15.37	4.58%	5909	Singapore	(Ngo et al. 2013)
20.6-21.2	7.52-7.78%	5,132-5,347	Ecuador	(Valencia et al. 2009)
13.1	2.74%	NA	Panama	(Kirby and Potvin 2007)

Table 1.5

Comparison of five different carbon estimates extrapolated to the entirety of the Wanang Conservation Area (10,770ha).

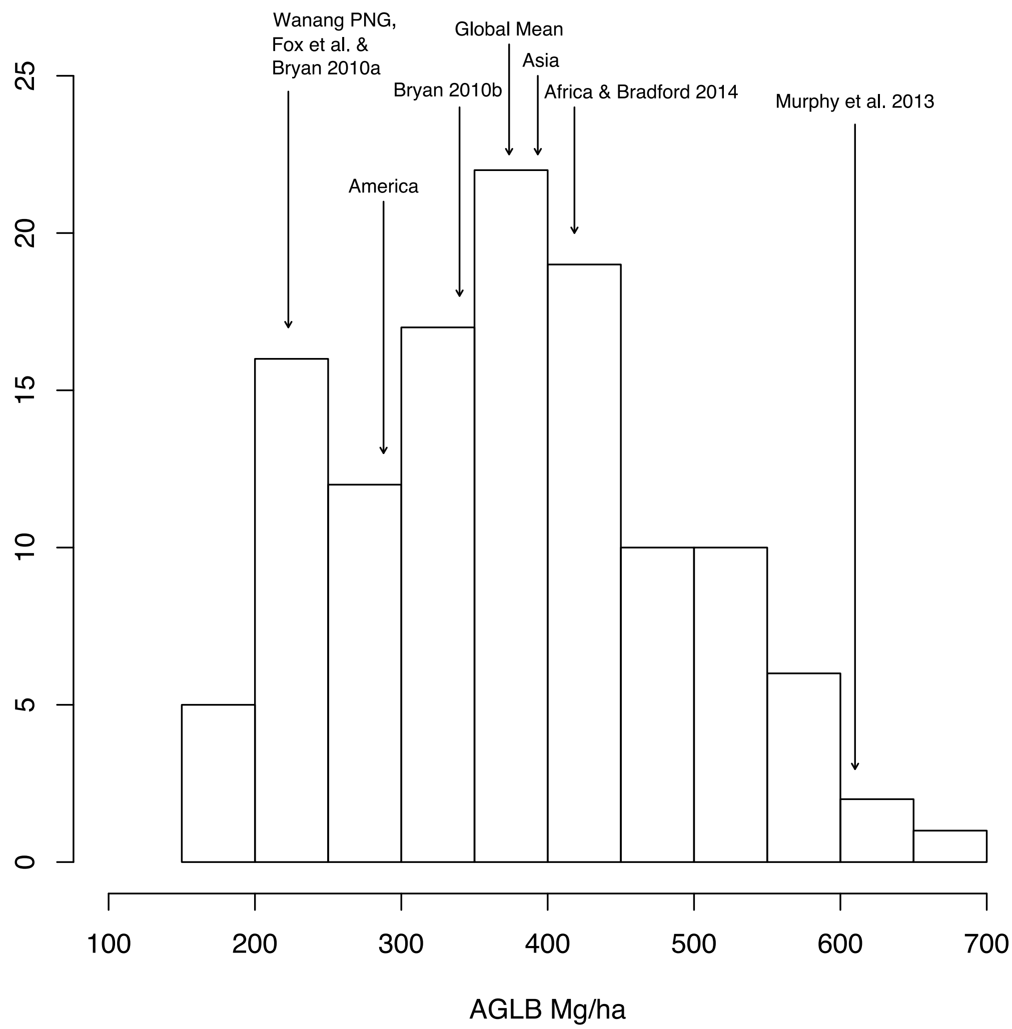
Table 1.5

Carbon estimate	Wanang carbon (Mg)
Mean estimate	1,197,000
Low	870,000
High	1,747,000
Fox et al. 2010	1,200,000
Bryan et al. 2010	1,830,000

Figure 1.1

Histogram of tropical forest AGLB. Arrows indicate estimates of lowland rainforest AGLB from Bryan et al. (2010), Fox et al. (2010), and for Wanang. A global mean (373.65 Mg/ha) and means for American (287.85 Mg/ha), African (418.28 Mg/ha) and Asian (393.25 Mg/ha) regional estimates derived from Slik et al. (2013). Australian estimates are provided from Bradford et al. (2014) and Murphy et al. (2013).

Figure 1.1



Wanang PNG,
Fox et al. &
Bryan 2010a
Global Mean
Asia
Bryan 2010b
Africa & Bradford 2014
Murphy et al. 2013
America
0
5
10
15
20
25
100
200
300
400
500
600
700
AGLB Mg/ha

Figure 1.2

Tree distributions for the two most massive species in Wanang forest. The top panel shows *Pometia pinnata* (Sapindaceae), dominant in ravine and riparian areas. The bottom panel shows *Intsia bijuga* (Fabaceae), closely associated with ridgetops. Biomass in the plot is heavily influenced by *Intsia bijuga*, as can be seen comparing it’s stem distribution in Figure 1.2 and spatial variation in plot biomass in Figure 1.4.

Figure 1.2

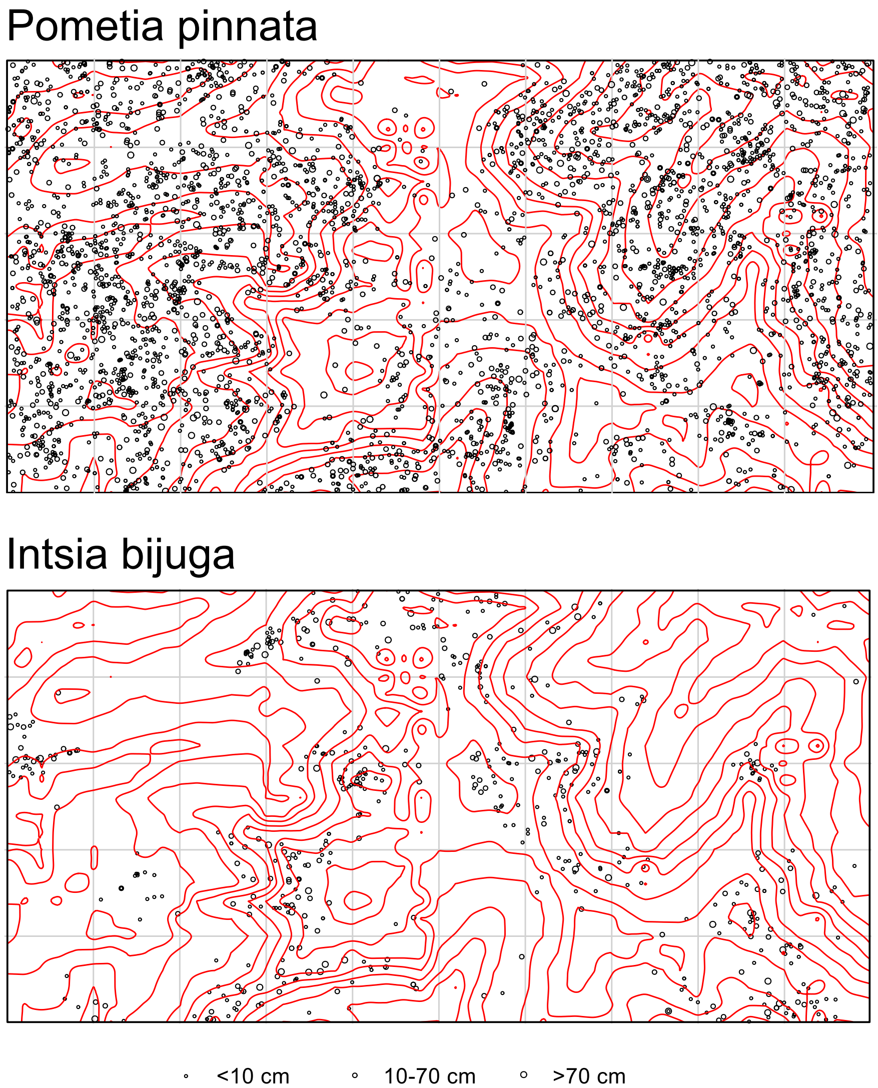


Figure 1.3

Histogram of 1 ha subset ABLG values in 50 ha of Wanang forest. The range of AGLB per hectare at Wanang ranged from 161.5 to 324.4 Mg/ha with a mean of 222.3 and 95% CI of 211.3-232.7.

Figure 1.3

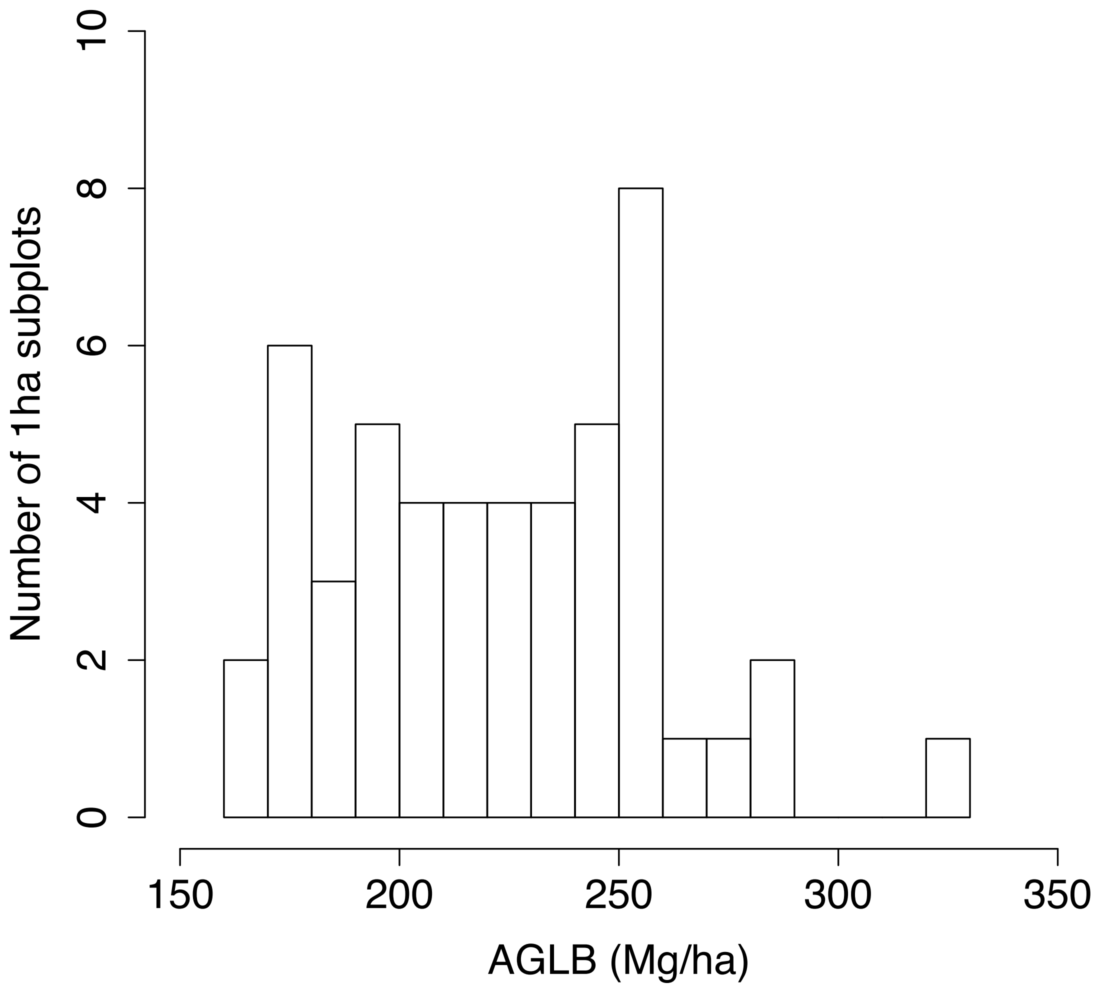
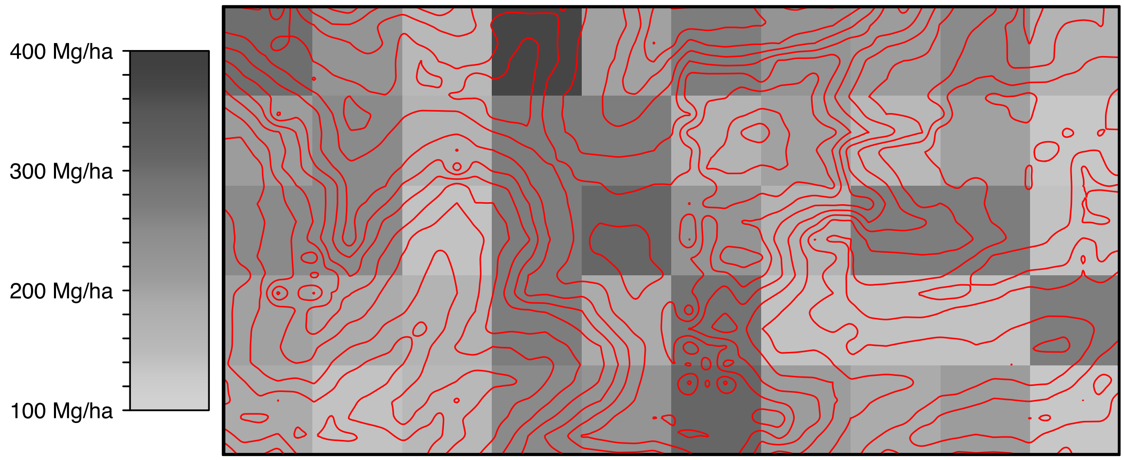


Figure 1.4

Spatial variation in AGLB in 50 ha of Wanang forest with red 10 m topographical contours. Grayscale colors indicate variation in AGLB in one hectare subplots.

Figure 1.4



CHAPTER 2

Associations of soil nutrients, topography, and forest dynamics with New Guinea rainforest regeneration and biomass accumulation

Introduction

Although there is strong evidence that the environment is important in determining species distributions and community composition in tropical forests (e.g. Harms et al. 2001, John et al. 2007, Baldeck et al. 2012), our knowledge of how the environment shapes biomass distributions and the accumulation of biomass at fine scales is limited. Landscape scale studies in the tropics (e.g. Laurance et al. 1999, Clark and Clark 2000) have focused on coarse variation in soil type and topography and have produced conflicting results (Unger et al. 2012), leaving the extent of correspondence between fine scale soil nutrient variation and biomass an open question and one certainly important for understanding important global reservoirs of carbon stored in tropical forests (Dixon et al. 1994, Schimel 1995).

Carbon source/sink dynamics of tropical rainforest are contentious (Phillips et al. 1998, Wright 2005) and of global importance as they represent the largest terrestrial carbon pool (Brienen et al. 2015), such that our limited understanding of carbon dynamics and the relationship between biomass accumulation and abiotic site features (e.g. topography, soils) are significant ecological problems. The dynamics of forest carbon are explicitly tied to demography, where the processes of recruitment, growth, and mortality are key determinates of carbon accumulation and retention in woody vegetation (Brienen et al. 2015). Beyond variation in intrinsic mortality rates, often correlated with life history strategies (Wright et al. 2010), catastrophic disturbance events can disproportionately impact community level mortality rates (Chazdon 2014), limiting carbon storage in forest systems (Doughty et al. 2015). Although tremendous effort has gone into developing an understanding of tropical forest dynamics (Swaine et al. 1987), this work has not equally characterized all forests globally.

Tropical rainforests have often been thought of worldwide as a single ecosystem that is species rich, evergreen, and ancient with the implication that processes shaping them are similar. The reality of this notion of an untouched and primeval forest has been critiqued in the literature (Whitmore 1990, Clark 1996) and further emphasis continues to be put on recognizing that forests worldwide have in the past or are currently being disturbed by natural processes and human influence (Chazdon 2003, Chazdon 2014). Intrinsic disturbance regimes and background mortality rates vary greatly among regions, with trends in forest turnover being related to global patterns of productivity (Stephenson and Mantgem 2005). Periodic natural disturbance can maintain a shifting mosaic of regenerating forest patches of different ages across the landscape (Whitmore 1991) which is implicated in maintenance of species diversity and coexistence (Connell 1978, Molino and Sabatier 2001). Early studies of the extent to which mature forests contain regenerating patches at any one time have focused primarily on treefall rates, the extent of these disturbances, and consequences of habitat partitioning within gaps (Brokaw 1985, Denslow 1987). Larger scale natural disturbances caused by landlsides, cyclones, or fireds may be more directly analogous to succession following agriculture than a regenerating tree fall gap in terms of spatial extent and catastrophic mortality (Guariguata 1990).

Chronosequence studies examine a series of forest plots differing in age but located in similar environmental conditions, to infer changes in forest structure, composition, and function during regeneration (Brown and Lugo 1990, reviewed in

Chazdon 2014). This research on forest succession has identified differences between younger and more mature forests in species richness, trait diversity, phylogenetic diversity and basal area (e.g. Lebrija-Trejos et al. 2008, Whitfeld et al. 2012a, Whitfeld et al. 2014). Using a series of destructively sampled plots and small abandoned post-agricultural fields, Whitfeld et al. (2012a, 2012b, 2014) described the signature of forest succession in New Guinea lowland rainforest. As far as we know, a chronosequence approach has not been used to estimate the age and turnover rate of mature forests at fine scale, although remote sensing (e.g. Chambers et al. 2013) and natural history (Martinez-Ramos et al. 1988) approaches have been used to date canopy gaps and forest disturbance rates.

The island of New Guinea is a heavily forested tropical island, home to some of the largest remaining continuous landscapes of lowland rainforest in the world. Soils of New Guinea are geologically young, unstable and nutrient rich (Loffler 1977). Forests on the island are considered to be exceptionally dynamic (Garwood et al. 1979, Johns 1986, Whitfeld et al. 2014, Vincent et al. 2015, Chapter 1), but no quantitative comparisons have been carried out to test this assumption.

Using spatially explicit tree census data from the Wanang 50 ha forest dynamics plot (FDP), topography, soil nutrients, and a dated chronosequence (Whitfeld et al. 2014), we investigated forest dynamics (i.e. recruitment, growth and mortality), disturbance, forest age and the influence of the abiotic environment on species composition and basal area. We seek to shed light on ecological processes affecting lowland New Guinea rainforests particularly the role of forest dynamics in biomass accumulation and flux in this ecosystem. Where possible, we present parallel results from Barro Colorado Island

(BCI), Panama to contextualize our study by direct comparison with another lowland rainforest.

We addressed four questions relating to species composition, forest dynamics and biomass accumulation:

1) To what extent do topography and soil nutrients explain variation in tree species composition and basal area? What portion of this variation is spatially structured?
2) What is the age class distribution of Wanang forest as estimated from an adjacent chronosequence?
3) Is chronosequence dating corroborated by indicator species? How does our age class dating correspond to forest regeneration phase?
4) How do mortality rate and forest regeneration phase of Wanang forest compare to other tropical forests?

If frequent disturbance at small spatial scales caused by frequent land slips is a significant influence on forest structure in the Wanang FDP, as we hypothesize, then we would predict: little association soil nutrients on species composition and biomass distributions, little spatial structure in biomass distributions, and a younger forest with a more successional character compared to other tropical rainforests with lower rates of natural disturbance.

Methods

Plot description and census data

The 50 ha Wanang forest dynamics plot (FDP) is located in mature lowland wet rainforest in the Middle Ramu area of the Madang province in Northern Papua New Guinea (Vincent et al. 2015). Wanang is situated in an extensive nearly contiguous block of forest comprising 18.5 million hectares in Papua New Guinea (Shearman et al. 2009). Soils at Wanang are described as a heterogeneous mixture of entisols, inceptisols and alfisols, depending the timing of disturbance and exposure of parent material (B. Turner pers. comm.). Aseasonal precipitation averages 4000 mm annually, with no less than 125 mm of rain per month. There is significant topographical relief in the plot, with riparian areas (~90 meters above sea level) flanking both short ends of the rectangular plot and a large main ridge bisecting the plot (~190 meters above sea level) (Figure 2.1).

The Wanang FDP was established in 2009 following protocols developed by the Center for Tropical Forest Science (CTFS) (Condit 1995, Condit 1997), a global network of forest dynamics plots (Anderson-Teixeira et al. 2015). In brief, the plot is 1,000 m by 500 m, gridded to 1,250 quadrats 20 m by 20 m each. An intensive topographical survey was conducted during plot establishment, where elevation readings were taken at each grid point. Thorough error checking was carried out during the survey to ensure that each position on the horizontal grid was accurate to within 10 cm. From these elevation values, indices of mean elevation, slope, and convexity were determined per quadrat (Harms et al. 2001). Mean elevation was defined as the average elevation of the four corners of each quadrat. Slope was calculated as the average slope of four planes created by connecting three corners of each quadrat at a time. Convexity was calculated as the mean elevation of the focal quadrat minus the average elevation of all directly adjacent quadrats.

During plot enumeration, every stem ≥1 cm in diameter at breast height (1.3 m above ground) was tagged, measured, and mapped to the nearest 10 cm. A subsequent species identification survey was carried out to associate every stem with a species or morphospecies concept. Voucher specimens (reproductive when possible) were collected for all trees, more intensively for those that were problematic taxa or were unfamiliar to field botanists. The first census at Wanang recorded a total or 276,139 stems belonging to 253,350 individual trees comprising 581 taxa, including 531 species and 50 morphospecies in 253 genera and 85 families. All species determinations were databased and vouchers were catalogued and maintained in a plot reference collection comprised of at least five specimens per species or morphospecies. Plot census data were published in a relational database maintained by CTFS.

All analyses and data manipulation were carried out in R version 3.1.1 (R Core team 2014), an open source project for statistical computing. Specific packages and functions are mentioned within methods sections for associated analyses. Where possible, we compared our results from the Wanang plot to those we calculated using a dataset from the most recent census for the Barro Colorado Island, Panama 50 ha plot (Condit et al. 2012). Details of analyses carried out on both Wanang and BCI data are described within specific method sections.

Basal area

We calculated basal area for each stem in the plot as:

$BA = \pi\ (DBH/2)^2$

Basal area per stem was summed per 20 m by 20 m quadrat expressed as m^2 per hectare. This process was repeated using data from the Barro Colorado Island CTFS plot. Variation in basal area per quadrat at Wanang and BCI was visualized in dot plots accompanied by cumulative density curves. We tested for a difference in distributions of basal area per quadrat between BCI and Wanang using a Wilcoxon rank-sum test, as basal area distributions violated the assumption of normality for a t-test. Basal area values per quadrat were also used to create a map of basal area distribution in the Wanang FDP. Each quadrat was plotted and scaled by minimum (white) and maximum (black) values per quadrat to create a visual representation of spatial variation in basal area per quadrat in the plot.

Soil analysis and interpolation

Soil cores were collected at 296 locations in the Wanang 50 ha plot between April and May 2013. Samples were air dryed, weighed, and packaged for shipment to Smithsonian Tropical Research Institute for subsequent analysis with the same methods and under the same conditions of previously published studies (John et al. 2007, Baldeck et al. 2012). Soil pH was determined in both deionized water and 10 mM CaCl2 in a 1:2 soil to solution ratio using a glass electrode. Concentrations of Al, Ca, Fe, K, Mg, Mn, and Na were determined by extraction in 0.1 M $BaCl_2$ (2 h, 1:30 soil to solution ratio), with detection by inductively-coupled plasma optical-emission spectrometry (ICP–OES) on an Optima 7300 DV (Perkin-Elmer Ltd, Shelton, CT) (Hendershot et al. 2008). Nitrogen mineralization was determined using in-field ion-exchange resins at 293 sites in the Wanang Plot during April and May of 2013. Five grams of mixed-bed ion-exchange resin (Dowex Marathon Mr-3) was enclosed within a 6 cm x 7.5 cm mesh bag (polyester monofilament, 74 per inch mesh count, 220 micron mesh opening) sewed with monofilament thread. Bags were inserted into the upper mineral soil horizon at a 45 degree angle by making a cut with a machete, inserting the bag, and gently tamping the surface to enclose the bag in the soil. Bags were retrieved after approximately three weeks in the field. Nutrients were extracted with 75 mL of 0.5 M HCl for simultaneous determination of ammonium, nitrate, and phosphate in neutralized extracts by automated colorimetry on a Lachat QuikChem 8500 (Hach Ltd, Loveland, CO). Ammonium and nitrate concentrations were expressed as ug N per bag per day and are a time-integrated measure of nitrogen mineralization during the study period. In contrast, we interpreted phosphate concentrations as reflecting an equilibrium between the resin and the soil.

All soil nutrients were block kriged following John et al. (2007), interpolating measured values while incorporating spatial variation depicted in variogram models, to produce estimates of nutrient concentrations per quadrat. In the kriging procedure, variogram fits for Ca and K were manually adjusted to better capture broad-scale trends in soil nutrient variation by reducing the effect of unusually high variation at small spatial scales. Aggregate measures of total exchangeable bases (TEB), exchangeable cation concentration (ECEC), and base saturation (BS) were calculated after kriging as follows: TEB was calculated as the sum of Ca, K, Mg, and Na; ECEC was calculated as the sum of Al, Ca, Fe, K, Mg, Mn, and Na; BS was calculated as (TEB ÷ ECEC) × 100.

Recensus

In July 2012 and February 2013, 52 quadrats (2.08 hectares total) in the Wanang FDP were recensused. Each tree was located and remeasured if living or marked as dead if not seen or found dead. Stem maps from the initial plot census were consulted in the field to infer that missing individuals had died and decayed or had been displaced by disturbance. Quadrats were chosen for recensus haphazardly with emphasis on coverage over the first 30 ha of the plot since enumeration of the remaining 20 ha was still underway.

Relative growth rate (RGR) was estimated for each quadrat (RGR_{stand}) and for all species ($RGR_{species}$).

RGR per quadrat was estimated as:

$$RGR_{stand} = [\ln (BA_t) – \ln (BA_0)] / t_{quadrat}$$

Where BA_t and BS_0, expressed as $m^2\ ha^{-1}$ are basal area of all stems at the time of recensus and initial recensus, respectively, and $t_{quadrat}$ is the recensus interval in years for the focal quadrat.

RGR was estimated for all species as:

$$RGR_{species} = [\ln (BA_t) – \ln (BA_0)] / t$$

Where BA_t and BS_0, expressed as $m^2\ ha^{-1}$ are basal area of all stems at the time of recensus and initial recensus, respectively and t is the average census interval for all quadrats. Average census interval was used in estimation of species level growth rate as stems belonging to each species were distributed across many quadrats with different intervals.

Recruitment rate was estimated for the entire tree community as:

$$r=[\ln (R_t) – \ln (R_0)] / t$$

Where R_t is the number of individuals alive in both censuses, R_0 is R_t plus new recruits, and t is the average census interval in years.

Our estimate of annual mortality was calculated using a common measure of mortality in forests (e.g. Clark and Clark 1992, Phillips et al. 1994, Condit et al. 1995):

$$m=[\ln (N_0) – \ln (N_t)] / t$$

Where N_0 is the number of individuals at the time of the initial census, N_t is the number of individuals surviving at recensus, and t is the average time (in years) between censuses.

We compiled published mortality estimates from tropical rainforests worldwide tor comparison with Wanang. Since mortality rate is highly influenced by tree size, we compared our results to those from other plots where all trees 1 cm diameter or larger were measured. Considering the small size of our recensus dataset (2 ha only), we were not able to calculate rates for different size classes nor groups of edaphic specialists (Russo et al. 2005) or habitat specialists (Chuyong 2014). We focused our comparison to measures of overall mortality rate, regardless of species or size class (Condit et al. 1995, Condit et al. 1999, Shen et al. 2013).

Statistical analyses

Spatial variation in species composition was visualized following Baldeck et al. (2012). A community matrix of individuals per species by quadrat was created for the Wanang FDP. This matrix was converted into a Bray-Curtis dissimilarity matrix (Bray and Curtis 1957), a popular quantitative dissimilarity measure, which was used in a three dimensional non-metric multidimensional scaling (NMDS) ordination. The proximity of points in ordination space reflects the similarity of quadrats in species composition. Coordinates for the location of each point (each representing a quadrat) in the x, y, and z axes were extracted. Points were scaled between zero and one using the maximum and minimum values in each dimension. Coordinates for each quadrat were converted into a red-green-blue (RGB) color to produce a colored visualization of beta diversity in terms of local variation in community composition (Anderson et al. 2010).

Variance partitioning (Borcard et al. 1992) by redundancy analysis (RDA) in the case of multivariate data for community composition and partial regression for basal area per quadrat was performed to evaluate associations of topography, soil nutrients and spatial proximity with species composition and basal area distributions. Function 'varpart' from the Vegan package (Oksanen et al. 2013) was used with the response variables being either a community matrix of quadrats by species or basal area per quadrat and explanatory matrices being topographic variables and soil nutrients. Principal coordinates of neighborhoods matrix (PCNM) (Borcard and Legendre 2002, Dray et al. 2006) is a powerful and flexible tool used to account for the influence of adjacent sampling sites also known as spatial autocorrelation (Legendre et al. 2005, Legendre et al. 2009). In brief, the method uses a truncated Euclidean distance matrix of neighboring quadrats defined as those directly adjacent, including diagonals (i.e. Queen's criterion), for a maximum of eight neighbors per quadrat. The distance of all neighboring quadrats is maintained and all non-neighbor distances are then set to four times the distance between points. All positive eigenvalues of a principal coordinates analysis (PCoA) on the truncated distance matrix are maintained for inclusion in ordination or regression analyses to account for the effect of spatial proximity of samples in the variance partitioning procedure. Adjusted r^2 values are derived for each testable fraction of explanatory factors following Peres-Neto et al. (2006), providing a robust estimate of variation explained while adjusting for the number of explanatory variables. Similar partitioning procedures have been used to investigate the influence of spatial structure and abiotic variables on species composition of tropical and sub-tropical forests (Legendre et al. 2009, Baldeck et al. 2012). A schematic venn-diagram showing variance partitioning components and labeling conventions is included in Figure 2.2.

Regeneration phase

Stem size class ratios have been used in the past to account for regenerative character or gap phase dynamics (Feeley et al. 2007) in analyses of forest inventory data. We calculated an index of forest regeneration phase following Feeley et al. (2007) to explore whether the signature of forest regeneration based on the log ratio of basal area held in large to small stems is similar in the Wanang FDP to other lowland rainforests. The gap phase (GP) statistic was calculated as:

$$GP = \ln (BA_{30} + 1) - \ln (BA_{10} + 1)$$

Where BA_{30} is the basal area ($m^2\ ha^{-1}$) in the focal quadrat held in stems 30 cm or larger and BA_{10} ($m^2\ ha^{-1}$) is basal area held in stems less than 10 cm DBH. This measure is contingent on the assumption that the predominant fraction of basal are in forests proceeding through succession will shift from small stems to large stems, an established process in forest regeneration (Franklin et al. 2002, Chazdon 2008). This transition will yield gap phase statistics differentiating more recently disturbed quadrats dominated by small stems (low GP) from older quadrats with an increased presence of large trees (high GP). This calculation was carried out for both Wanang and BCI and plotted as histograms and cumulative density curves of GP value per quadrat, colored by plot. As in our comparison of basal area between BCI and Wanang, we tested for a difference in distributions of GP per quadrat between BCI and Wanang using a Wilcoxon rank-sum test.

Chronosequence dating

Whitfeld et al. (2014) used a set of 11 post-agricultural 0.25 ha plots and two destructively sampled ha forest plots near the Wanang FDP (Whitfeld et al. 2012b) of known ages ranging from 3 to >50 years since disturbance to study how phylogenetic diversity, species richness, and plant functional traits change through forest succession (Whitfeld et al. 2012a, Whitfeld et al. 2014). Plots were aged by combining evidence from forest cover maps based on aerial photography and local community knowledge. Plots other than those categorized as 'mature' (>50 years since disturbance) were dated according to the time elapsed since agriculture was abandoned. We used mean and standard deviation basal area measurements for each class of younger secondary (3-9 years old), older secondary (10-30 years old) and mature forest plots (>50 years old) (Whitfeld et al. 2014) to divide quadrats in the Wanang plot to corresponding age class bins with the addition of a 31-50 year old class between the older secondary and mature categories described in Whitfeld et al (2014). We tested for correlation between age class distributions of the entire plot and the subset of quadrats recensused.

The Indicspecies R package and function 'multipatt' (De Cáceres et al. 2010) was used to investigate similarity in species occurrence between quadrats of the 50 ha plot dated by basal area and satellite plots used for forest age dating. Indicator species were prioritized based on indicator value (Dufrêne and Legendre 1997), an index of fidelity and abundance in habitat types, and tested for statistical significance with 999 permutations of the community matrix. Only indicator species for a single age class were considered since we were attempting to match established age class categories rather than investigate species-habitat associations. Significant indicator species for different successional stages were compared to published results and analyses reproduced following Whitfeld et al. (2014) to validate our plot dating method. Results of a detrended correspondence analysis (DCA) as well as importance values (IV) and dominance measures of chronosequence species were used for validation. Although there was a difference in species richness between the more extensively sampled 50 ha forest inventory plot and the 4.25 ha chronosequence plots (581 total species versus 260 total species) the co-occurrence of species shown to indicate different successional stages would suggest that portions of the 50 ha plot were in concurrent stages of forest regeneration with the dated plots (Whitfeld et al. 2014).

Results

Soil, topographical, and spatial variables were statistically associated with 29% of variation in community composition in the Wanang plot (Table 2.1, Figure 2.2). Individual fractions had much less explanatory power, soil alone explaining 6% of variation and topography 8%. This variation in species composition can be visualized in the beta diversity map produced by translating coordinates from three-dimensional NMDS into RGB colors (Fig 2.3A).

Soil, topography and spatial variables explained little variation in basal area (4%) (Table 2.1). All explanatory variables, whether considered solely or in aggregate, explained little variation in biomass per quadrat in the Wanang plot (Table 2.1). Figure 2.3B is a visual representation of variation in basal area per quadrat in the Wanang 50 ha plot. Each square corresponds to a 20 m by 20 m quadrat, colored in gray scale with the minimum value represented by white and the highest value black (Figure 2.3B). No patterns corresponding to coarse topography (e.g. mean elevation shown in Figure 2.1) are apparent in the spatial representation of basal area, nor does basal areas appear to be spatially patterned.

Average basal area per quadrat in Wanang was 32.05±13.75 m^2/ha, ranging from 2.73 to 103.64 m^2/ha (Fig 2.3A and Figure 2.4). Basal area at BCI averaged 31.55±18.03

m^2/ha with a range of 8.18 to 167.22 (Figure 2.4). Results from a Wilcoxon rank-sum test suggested distributions of basal area per quadrat at BCI and Wanang are significantly different ($p<0.001$), likely based on a difference in shape primarily due to the presence of a long tail of high biomass quadrats at BCI.

Remeasurement of 52 quadrats (2.08 ha) resulted in data collection on 11,139 individual trees with a total of 12,153 stems belonging to 351 species. An individual tree may have multiple stems that branch below 1.3 m, herein our recruitment and mortality results refer to analyses using measurements of primary stems of individual trees and RGR refers to all stems. The interval between initial and second measurement ranged from 725-1313 days, with a mean and standard deviation of 943 +/-179 days (2.58+/-0.49 years). Annual mortality rate was estimated to be 3.95%, a figure higher than other lowland rainforests, but lower than a sub-tropical forest dynamics plot in Dinghushan, China (Table 2.2). Recruitment rate was lower than that of mortality, estimated as 2.77% annually.

Growth rate was calculated on all stems showing diameter growth ≥0 cm, which corresponded to 9994 total stems. Stand level RGR averaged 0.055±0.032 and ranged from 0.019 to 0.170. Values for all species with 50 or greater stems included in the recensus are presented in Table 2.3. Estimates of species level growth rates averaged 0.061, ranging from 0.021 in *Aglaia leppiorrhachis* to 0.150 in *Ficus hahliana*.

Dating quadrats in the 50 ha plot based on total basal area suggested that the majority of the plot (671 quadrats, 55% plot) had not been disturbed in at least fifty years (Table 2.4). The next largest portion corresponded to forest aged 30-50 years old (27%). The 10-30 and <9 years portions of the plot were small but not insignificant, 12% and 6%

respectively (Table 2.4). Mapping the distribution of these age classes showed no obvious correspondence to major topographical features (Figure 2.5). Age class distributions of the entire plot and recensus quadrats were highly correlated (r=0.997).

Results of GP per quadrat for Wanang and BCI show highly overlapping distributions (Fig 2.6). Although distributions appear similar for Wanang and BCI overall, Wanang had GP values more negative than any observed at BCI and BCI had higher GP values than any in the Wanang distribution. A Wilcoxon rank-sum test suggested that these distributions are not significantly different (p>0.05).

Measurements of GP by quadrat colored by age class shows that age class corresponds roughly to GP (Figure 2.7) and mean GP value per age class does reflect differences in age class (Table 2.4). Average GP values of younger forest quadrats have lower GP values than older forest quadrats, although there is considerable variation in GP value per age class (Table 2.4). For example, quadrats of the 10-30 year age class had an average (mean±sd) GP value of 0.13±0.86 whereas quadrats in the 30-50 year age class averaged 0.65±0.58 (Table 2.4).

Indicator species analysis of age classes in the Wanang 50 ha plot identified a total of 73 statistically significant indicator species, at least 9 for age class (Table 2.5, Appendix 2). The top ten strongest indicator species per age class are presented in Table 4 and a full list is provided in the supplementary information (Appendix 2). Many indicator species identified from the Wanang plot appear in the DCA of chronosequence data labeled by priority of abundance (Appendix 1). Additionally, there is correspondence between indicator species in the plot and our knowledge of life history variation (i.e. pioneer vs. late successional) in Wanang plot species (Whitfeld 2011a).

Discussion

Variance partitioning analysis of basal area measurements suggest that forest structure not explained by topographic or edaphic variation at Wanang. Clark and Clark (2000) found little influence of topography and soil type on biomass distributions in 600 hectares of rainforest. Our results echo those findings at finer spatial scale and in a more detailed examination of soil nutrient variation. Conversely, at a landscape scale (plots spanning 1000 km) Laurance et al. (1999) found that soil nutrients and soil water capacity parameters could explain up to one third of variation in forest biomass in Amazonian terra firme forest. These conflicting results are possibly tied to spatial scale and large differences in soil fertility between sites, but effectively illustrate the lack of consistency among studies relating biomass to soil variables (Unger et al. 2012). Our study offers the first assessment of the relationship between forest biomass and soil nutrients at a fine spatial scale, suggesting soils have little or no effect on basal area at the fine scale (20 m by 20 m quadrats) we studied. However, it is worth acknowledging that this is the first such study and it is possible that more detailed environmental data, such as data from different regions or finer scale topographical information (Chang et al. 2013), could alter our results.

In terms of species composition, our results agree qualitatively with Baldeck et al. (2013). Although it is difficult to compare levels of variation explained among studies (see Økland 1999), it is worthwhile to note that soil nutrients and topography appear to account for similar amounts of variation in tree community composition at Wanang and other rainforest plots globally (Baldeck 2013). Although the proportion of total variation accounted for by environmental variables was relatively small (29%), it is apparent from our RGB beta diversity map (Figure 2.3A) that some variation in composition in the Wanang tree community that roughly corresponds to major topographical features (Figure 2.1) such as ridges and gullies. There are perhaps many processes beyond our explanatory variable set that could be influencing variation in species composition in the Wanang plot.

Biotic interactions such as seed dispersal and neighborhood interactions were not explicitly dealt with in our analysis and likely play a significant role in shaping species composition in the Wanang plot. Another possibility is that we do not have sufficient resolution in our environmental data to detect trends associated with microtopography and small-scale variation in soil nutrients. For example, our soil data in some cases showed extreme variation at small scales, possibly caused by small landslips (Loffler 1977) that expose parent material and decouple the weathering and development of adjacent soils (B. Turner pers. comm.).

Likewise, the instability of soils in New Guinea lowland rainforests may contribute to the relatively low biomass (Vincent et al. 2015, Chapter 1), young age, and high mortality rate measured at Wanang. Johns (1986) provided a qualitative description of the dynamic nature of New Guinea according to the frequency of major disturbances, including extreme climatic events, earthquakes, and unstable soils. Garwood et al. (1979) contrasted the amount of land disturbed by earthquake-induced landslides in New Guinea and Panama, suggesting that 8-16% of land surface in New Guinea is disturbed per century compared to only 2% in Pananma. Garwood et al. (1979), using data from Simonett (1967), also suggested that erosional landslides in New Guinea disturb land at a rate of 3% per century. This figure is at least an order of magnitude greater than average rates measured in the landslide prone Luquillo mountains of Puerto Rico (Guariguata 1990). Although earthquake caused landslides likely operate on larger spatial scales than the disturbance we see in the Wanang plot, they further illustrate the geological instability of the young, uplifted ocean sediments that make up much of the island of New Guinea. Loffler (1979) described prevalence of tree mortality caused by slumps and treefalls triggered by a critical mass and height of forest trees, partially due to high rates of erosional surface wash (Ruxton 1967).

Frequent land slumps and rapid surface erosion could be responsible for the difference in mortality rate we see between the Wanang plot and similar lowland rainforests in Panama and Malaysia. The extremely high mortality reported for the subtrobical Dingushan plot might be attributed to erosion and drought related to extreme topography and seasonality. The Wanang plot has ~100 m elevation change in 50 ha compared to 260 m of elevation change in 20 ha at Dingushan (Li et al. 2009). Due to our relatively small recensus size, we were not able to parse mortality rates by tree size class, which are known to vary greatly (Coomes and Allen 2007). The proposed recensus of the entire Wanang plot will provide the data needed for a more detailed study of dynamics with regards to variation among tree species and size classes (sensu Condit et al. 2006). It is also possible that our slightly shorter census interval inflated our estimate of annual mortality due to the established pattern of community level mortality rate changing as a result of differences in intrinsic mortality rates of individual species (Lewis et al. 2004). In other words, as short-lived species die off, the censused tree population is increasingly dominated by species with low mortality rates. Since the mortality rate of trees in Wanang is influenced by catastrophic mortality independent of size class and intrinsic mortality rate in the form of land slumps (Figure 2.8), we speculate that inflation would be low considering that a longer census interval would allow more time for mortality by erosion and slumping in addition to mortality events correlated with tree size and species-specific mortality rate.

We used the gap phase (GP) index developed in Feeley et al. (2007), to see if Wanang displayed similar gap phase character compared to other tropical rainforests, including a direct comparison to a well-studied forest dynamics plot on Barro Colorado Island, Panama. Generally, our results agree with published results for rainforest plots in Panama, Cameroon, and Malaysia (Feeley et al. 2007). It is worth noting that extremes in gap phase differ between BCI and Wanang, similar to what we observed in basal area distributions. In other words, BCI gap phase distribution has a large number of quadrats with a higher GP than any observed at Wanang. On the other hand, the most extreme low GP value was observed at Wanang, although these low values were limited and were not dramatically lower than observations from BCI. This contrast reflects an ecologically meaningful difference in the ratio of basal area in small and large stems in portions of the Wanang and BCI plots. Low values of gap phase are produced when basal area in a tree community is held almost exclusively in small stems, indicating a young forest that lacks large trees. Alternatively, a high gap phase value results from forest basal area being held primarily in large stems, a feature of mature forests where small stems are relatively less abundant than in younger forests and large trees are dominant. This finding agrees with our plot dating results, although these measures are likely revealing different features of disturbance and forest recovery. Our plot dating method is based on total basal area and may be robust to remnant large trees in the case of entire quadrats not being disturbed.

The GP index is a stem class ratio, which will then pick up on the presence of a large remnant tree, even if all other remaining stems are small. These two measures are complimentary in nature, but further research is needed to understand how they vary with spatial scale and differ in indicating successional stage of regenerating forest.

We estimate that 6% of plot area was disturbed in the past ten years. This figure seems conservative because disturbed areas of mature rainforest could recover more rapidly than the abandoned swidden agricultural plots that were used to age Wanang forest. As opposed to fully cleared agriculutural plots, naturally disturbed forest can regenerate through resprouting, the seed bank, and opportunistic growth by remnant trees (Lawton and Putz 1988, Nepstad et al. 1996, Guariguata and Ostertag 2001). One of very few comparisons of post-agricultural and natural regeneration suggested that species composition may follow different trajectories, but basal area and stem density were comparable (Boucher et al. 2001).

Indicator species analysis along with detrended correspondence analysis confirmed that dated areas of the plot had similar common species to those in our reference chronosequence. This corroboration of basal area results with species similarity between chronosequence plots and dated quadrats in the FDP further supports our hypotheses about the significant role of frequent natural disturbance in shaping biomass distributions in the Wanang FDP. Corroboration of dating between satellite plots and portions of the FDP on the basis of species composition relied on the implicit assumption that species composition changes similarly through forest succession in the plot and the adjacent forest where aged plots were located (Whitfeld et al. 2014), which could be problematic as species composition may not proceed in a precisely analogous fashion

(Turner et al. 1997). Thus rather than compare overall composition, we relied on common indicator species to test correspondence in time since disturbance between mature forest and chronosequence plots. The correspondence in indicator species between the plot and chonosequence combined with the location of the chronosequence plots relative to the 50 ha plot, just a few kilometers away in contiguous rainforest, and their small size and brief cultivation make similarity in successional trajectory conceivable if not likely.

Attempts to date forest regeneration have typically been confined to remote sensing and methods relying on specific natural history, such as dating treefall gaps by palm morphology and growth rate (Martinez-Ramos et al. 1988). Determining stand age in mixed broadleaf forests with remote sensing (e.g. Landsat NDVI) has been shown to be problematic (Sader et al. 1989, Foody et al. 2003), particularly in delineating younger successional stages (Nelson et al. 2000). Chronosequencing, which acknowledges the analogy between secondary forest and regenerating patches in mature forest, may provide an effective addition to remote sensing to help resolve earlier successional stages. Interestingly, in a study focused on forest regeneration following landslides, Guariguata (1990) observed that basal area and floristic composition in Puerto Rican forests 50 years after landslides resembled that of pre-disturbance forest, a strikingly similar length of time to our observations at Wanang.

Conclusions

The results we present here are some of the first measures of forest dynamics in New Guinea rainforests, the third largest rainforest globally, following only the Amazon and Congo. Forest dynamics are inextricably linked to carbon storage, as recruitment, growth, and mortality are fundamental to determining the amount of carbon moving in and out of forested systems (Doughty et al. 2015). Studying carbon dynamics continues to be of great global interest (Brienen et al. 2015) and essential to understanding global carbon balance in a time of global environmental change.

Our results support the reputation of New Guinea forests as very dynamic, particularly in comparison to other lowland rainforests. The high mortality rate and objectively young age of the forest illustrates an important consideration in global models of carbon storage and dynamics. Basal area in the plot showed little or no relationship to variation in soil nutrients and topography, possibly caused by frequent small-scale disturbances due to unstable terrain. Despite the dynamic nature we describe, New Guinea rainforests appear do have some significant changes in species composition associated with topography and soil nutrients. Our results serve to further contextualize New Guinea within our larger understanding of lowland tropical rainforests globally.

Table 2.1

Variance partitioning results for species composition and basal area per quadrat in the Wanang forest dynamics plot. Following Baldeck et al. 2013 lettered variance components are labeled with reference to Figure 2.2: total - overall proportion of variation explained by all topography, soils, and spatial (a+b+c+d+e+f+g), spatial – variation explained by spatial variables (a+d+f+g), environment (b+c+d+e+f+g) – variation explained by soils and topography, spatial|environment – variation explained by spatial variables while controlling for soils and topographical variables (a), spatial & environment – spatially structured variation in topographical soil variables (d+f+g), environment|spatial –variation explained by topography and soils while controlling for spatial structure (b+c+e), soils – proportion of variation explained by soil nutrients (b+d+e+g), topography –variation explained by topographical variables (c+e+f+g), soils|topography – variation explained by soil variables while controlling for topographical variables (c+d), soils & topography –variation explained by topographically structured variation in soil nutrients (e+g), topography|soils – variation explained by topography after controlling for soil variables (c+f). Values are adjusted r^2 values, a robust estimator of variance explained that adjusts for the number of variables in the model.

Table 2.1

Explanatory portion	species composition	basal area
total	0.29	0.04
Spatial	0.29	0.04
Environment	0.11	0.04
Spatial|environment	0.18	0
Spatial & environment	0.08	0.04
Environment|space	0.01	0
Soils	0.06	0.02
Topography	0.08	0.04
Soils|topography	0.04	0.01
Soils & topography	0.02	0
Topography|soils	0.06	0.03

Table 2.2

Mortality rates of stems greater than or equal to 1 cm DBH in the present study and previously published literature. All studies referenced used the same equation to produce these estimates of mortality based on all individuals in respective plots. The four values for BCI, from Condit et al. 1995, Condit 1999, and Shen et al. 2013 were averaged and reported with standard deviation.

Table 2.2

Location	Annual mortality rate	citation
Dinghushan, China	5.85	Shen et al. 2013
Wanang, PNG	3.95	Present study
Pasoh, Malaysia	2.55	Shen et al. 2013
Changbaishan, China	2.31	Shen et al. 2013
BCI, Panama	2.24±0.54	Condit et al. 1995, Condit 1999, Shen et al. 2013
Pasoh, Malaysia	1.46	Condit 1999

Table 2.3

Relative growth rates for 12 species for which 100 or more stems were remeasured at Wanang. Species are listed in order of decreasing number of stems measured. Estimates for RGRspecies were calculated using average census interval for all remeasured quadrats.

Table 2.3

Species	Stems measured	RGR
Ficus hahliana	207	0.150
Gnetum gnemon	170	0.045
Celtis latifola	159	0.065
Gymnacranthera paniculata	147	0.042
Mastixiodendron pachyclados	143	0.028
Harpullia longipetala	124	0.044
Pimelodendron amboinicum	117	0.036
Aphanamixis polystachya	104	0.070
Versteegia cauliflora	104	0.048
Ficus badiopurpurea	101	0.084

Table 2.4

Forest age classification criteria, age class composition, and average ± sd gap phase value per age class in the Wanang 50 ha plot. All 20 m by 20 m quadrats (n = 1,250) in the plot were assigned to an age class defined by basal area.

Table 2.4

Age (years)	Basal area (m^2 ha^{-1})	# of quadrats	% of plot	GP (mean±sd)
3-9	<14.9	72	0.06	-0.25±0.87
10-30	14.9-20.3	155	0.12	0.13±0.86
30-50	20.3-28.3	352	0.27	0.65±0.58
>50	>28.3	671	0.55	1.43±0.53

Table 2.5

Top ten indicator species for each age class in the Wanang 50 ha plot. Statistically significant indicator species ($p<0.05$) as determined by permutation are ranked by their indicator value statistic, indicating characteristic species that are abundant in a certain age class and present in most sites in that age class. The statistic being calculated following Dufrêne and Legendre (1997) ranges from 0 to 1, with those values closer to having higher fidelity to and abundance in their associated habitat class. A full list of significant indicator species per age class is included in Appendix 2.

Table 2.5

3-9 years		
species	stat	p
Ficus congesta	0.47	0.002
Ficus erythrosperma	0.38	0.013
Ficus rubrivestimenta	0.36	0.028
Macaranga aleuritoides	0.31	0.016
Ficus pungens	0.28	0.006
Ficus variegata	0.28	0.045
Trichospermum pleiostigma	0.22	0.028
Elaeocarpus sphaericus	0.21	0.020
Macaranga quadriglandulosa	0.21	0.043
Pipturus argenteus	0.18	0.007
10-30 years		
species	stat	p
Ficus hahliana	0.51	0.006
Pometia pinnata	0.50	0.042
Ficus adelpha	0.42	0.027
Macaranga falacina	0.37	0.038
Allophylus cobbe	0.33	0.019
Elaeocarpus miegei	0.31	0.011
Syzygium furfuraceum	0.31	0.036
Dendrocnide longifolia	0.29	0.035
Antidesma excavatum	0.24	0.031
Celtis 01	0.20	0.041
31-50 years		
species	stat	p
Litsia timoriana	0.53	0.009
Pseuduvaria versteegii	0.51	0.003
Aglaia rimosa	0.50	0.029
Chisocheton ceramicus	0.48	0.040
Planchonella xylocarpa	0.44	0.044
Aglaia 01	0.44	0.025
Celtis philippensis	0.41	0.015
Terminalia complanata	0.36	0.047
Dendrocnide cordata	0.14	0.040
>50 years		
species	stat	p
Gnetum gnemon	0.59	0.001
Dysoxylum arborescens	0.57	0.001
Celtis latifolia	0.56	0.001
Pimelodendron amboinicum	0.56	0.001
Mastixiodendron pachyclados	0.56	0.001
Gymnacranthera paniculata	0.55	0.001
Harpullia longipetala	0.55	0.001
Versteegia cauliflora	0.54	0.001

Ixora amplexifolia	0.54	0.001
Aglaia lepiorrhachis	0.54	0.001

Figure 2.1

Mean elevation per quadrat in the Wanang plot is represented by a color gradient from blue (lowest elevation) to red (highest elevation). Layered on tope of the gridded mean elevation map is a set of 20 m contour lines showing topographical relief in the plot corresponding to variation in elevation represented in the colored quadrat boxes. Elevation in the plot ranges from approximately 90 m to 190 m. Major topography is characterized by low lying riverside areas flanking a major ridge that bisect the plot

Figure 2.1

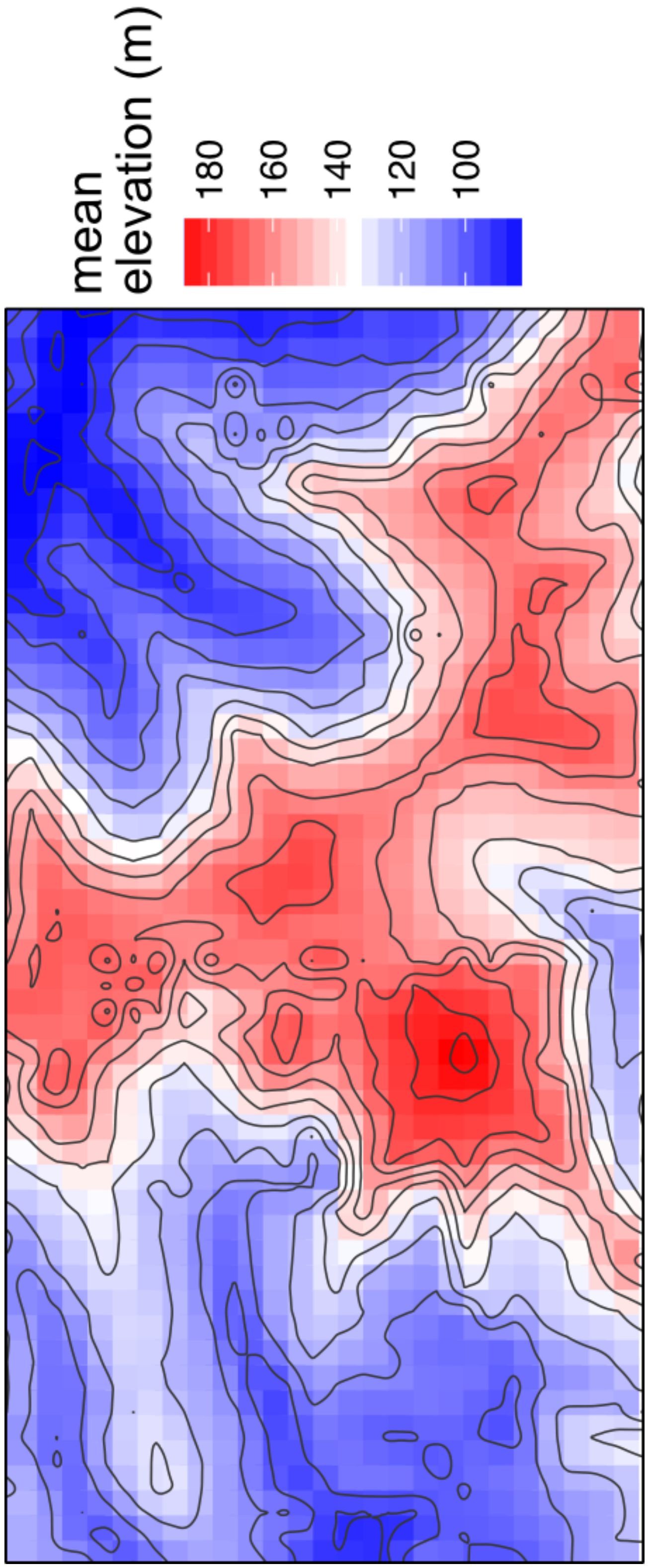


Figure 2.2

Components of variance partitioning analysis depicted as a venn diagram. Letter labels correspond to elements of each tested component of variation as presented in table 1. Each circle in the venn diagram represents a different set of explanatory variables, overlapping areas represent components shared between explanatory variables. “Topography” represents variance explained by topographical indices of mean elevation, slope, and convexity per quadrat. “Soils” represents variation explained by a matrix of soil nutrient variables per quadrat. “Spatial” represents variation explained by positive eigen vectors from the PCNM analysis, indicative of spatial structure in the response data. “Residuals” represents the portion of variance not accounted for in the variance partitioning among our three explanatory matrices.

Figure 2.2

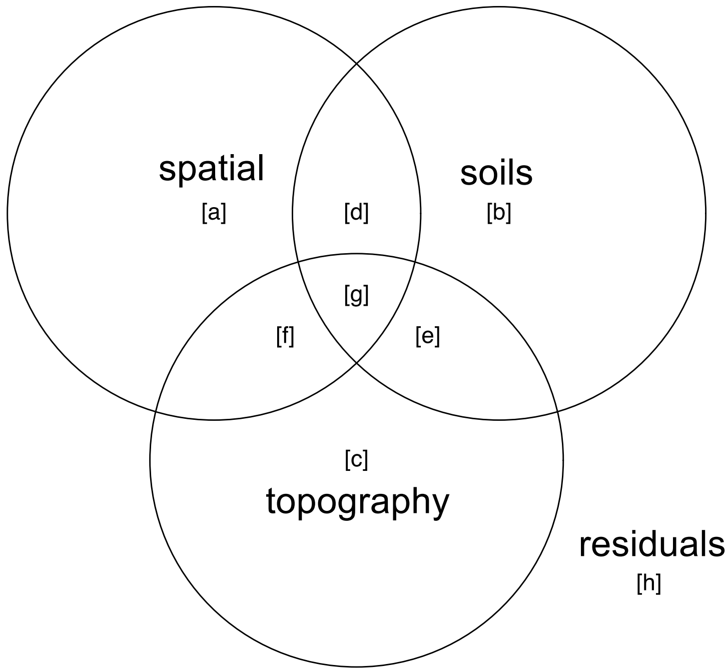
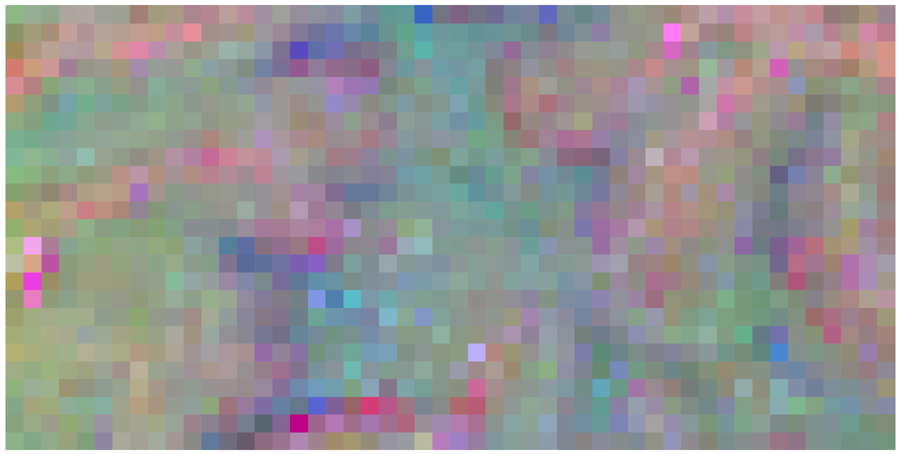


Figure 2.3

A) Beta diversity map of the Wanang 50 ha FDP, quadrats are colored in RGB as determined by locations in a 3 dimensional non-metric multidimensional scaling. This method produces a visual representation of the variation in species composition within the plot, with quadrats that are similar in species composition being represented by similar colors and vice versa. B) Plot map of basal area values per quadrat (m^2 ha^{-1}) displayed on a gray scale. Basal are is scaled by minimum values represented as white and the maximum as black. Each individual square corresponds to a 20 m by 20 m quadrat in the Wanang FDP.

Figure 2.3

A



B

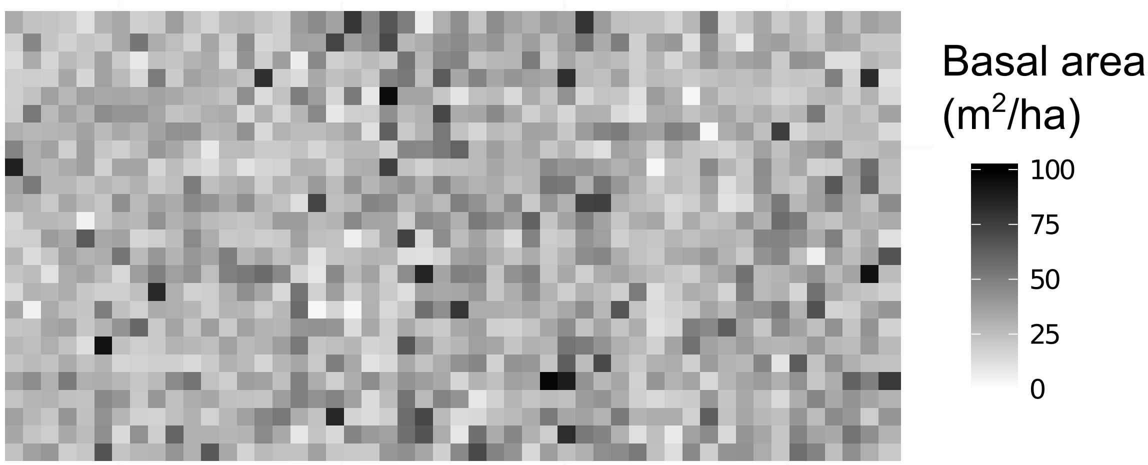


Figure 2.4

Dotplot of basal area ($m^2\ ha^{-1}$) per 20 m by 20 m quadrat in the Wanang and BCI 50 ha plots. Points were randomly adjusted to minimize over plotting and violin plots included to reflect cumulative density of data points. The majority of the distributions correspond with on another, with BCI having a longer right tail of high biomass quadrats (>100 $m^2\ ha^{-1}$) that are lacking in the Wanang dataset.

Figure 2.4

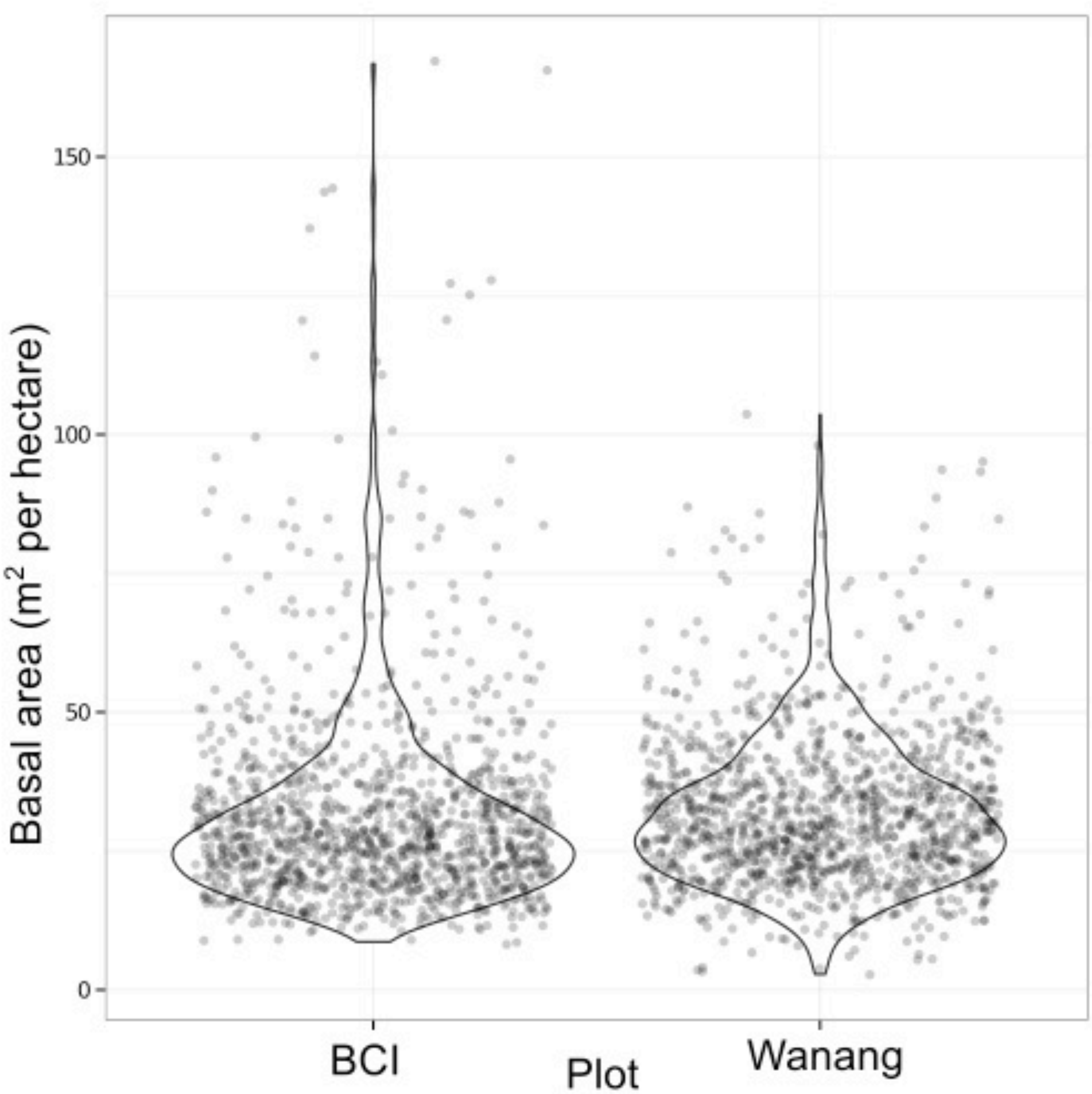


Figure 2.5

Spatial distribution of classified in age class categories in the Wanang 50 ha FDP. Different age classes are represented on a scale of green colors, with younger age classes being lighter green and older darker green. Each square corresponds to one 20 m by 20 m quadrat. Age classes were defined in Whitfeld et al. 2014 based on a chronosequence of plots located near the Wanang 50 ha plot (Table 3).

Figure 2.5

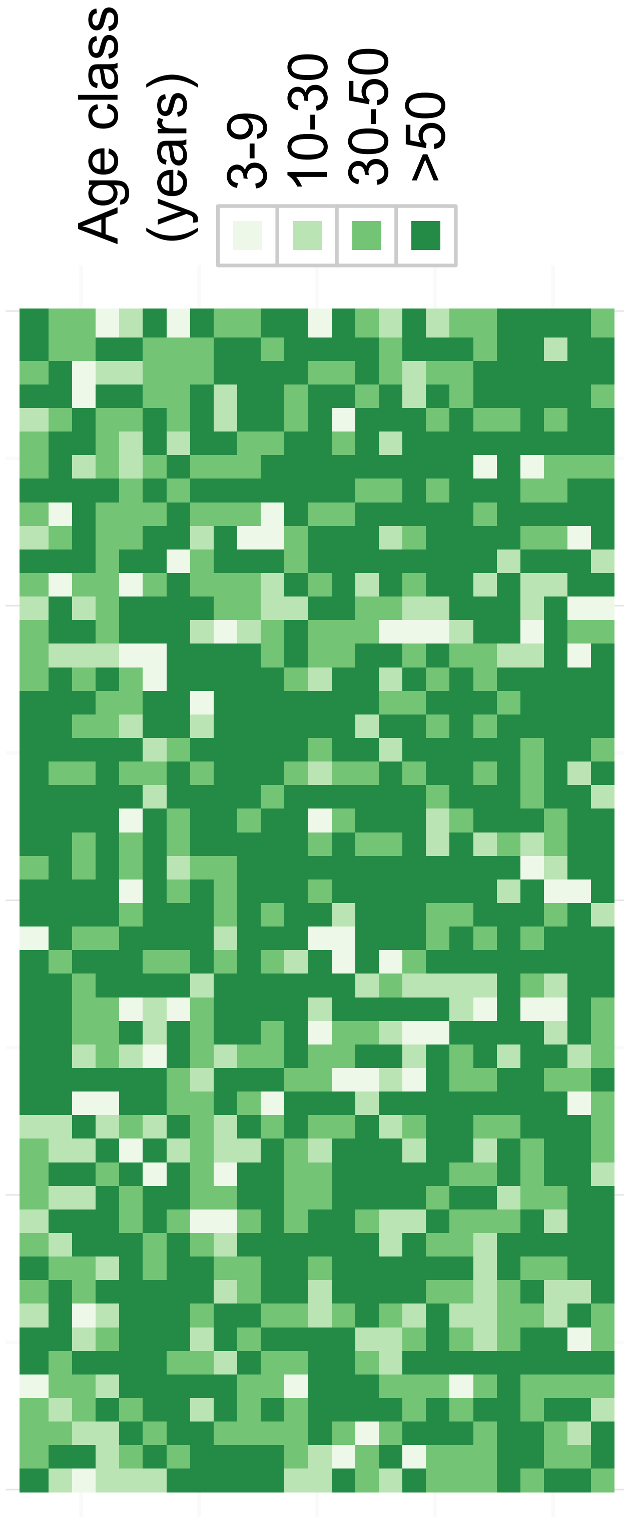


Figure 2.6

Values of GP per quadrat for both Wanang and BCI. Points were randomly adjusted to minimize over plotting and violin plots included to reflect cumulative density of values. The GP index is a ratio basal area per quadrat held in large and small stems. Small values of GP indicate quadrats dominated by small stems, suggesting an area of forest regenerating from disturbance. Large values of GP represent area of forest that have the majority of basal area held in large stems, indicating a mature forest stand with large trees.

Figure 2.6

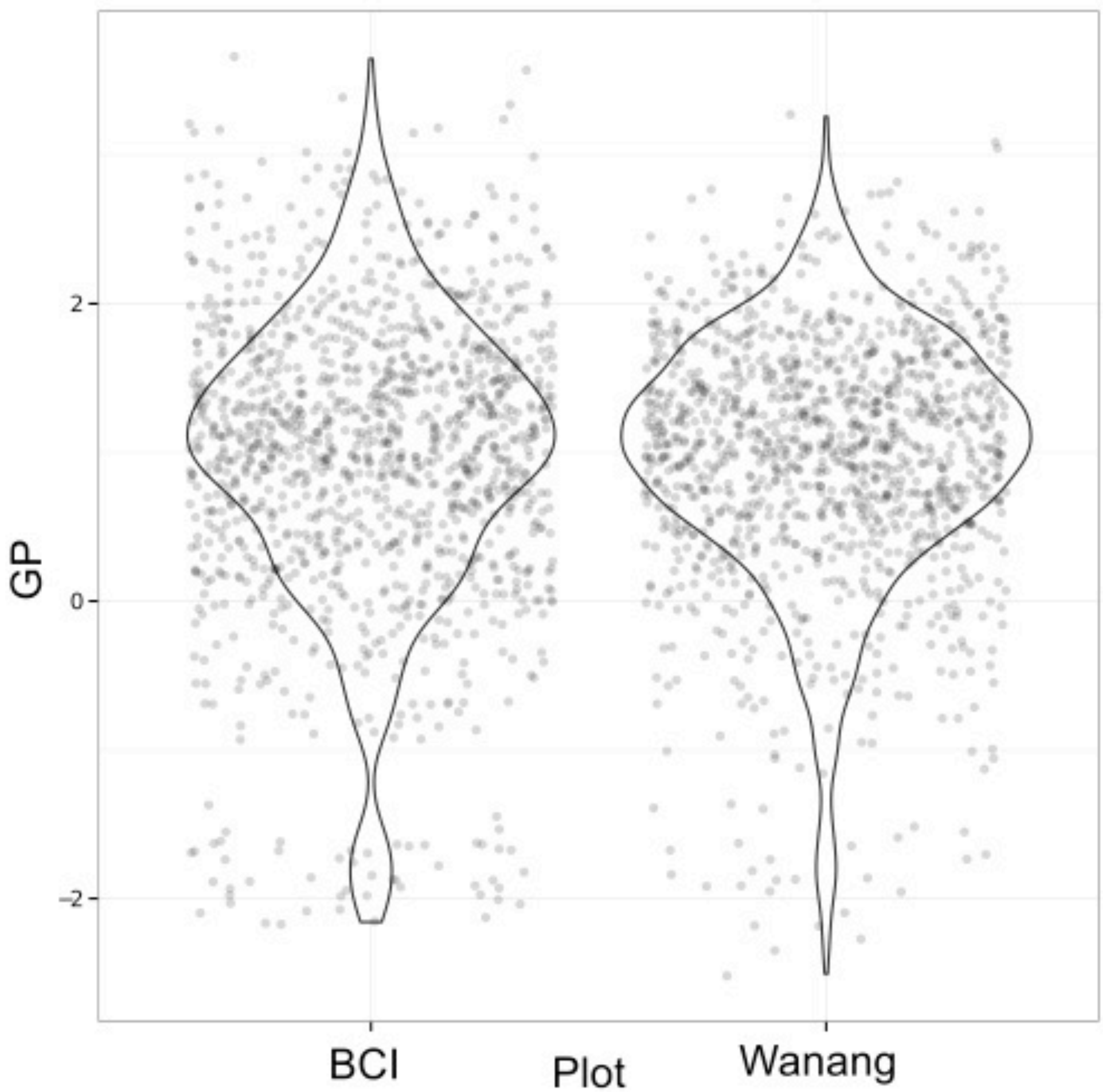


Figure 2.7

Histogram of GP values for the Wanang plot colored by age class to show correspondence between gap phase and estimated time since disturbance. The youngest age class (<9 years) is shown in orange, 10-30 years shown in green, 30-50 shown in blue, and >50 years shown in purple.

Figure 2.7

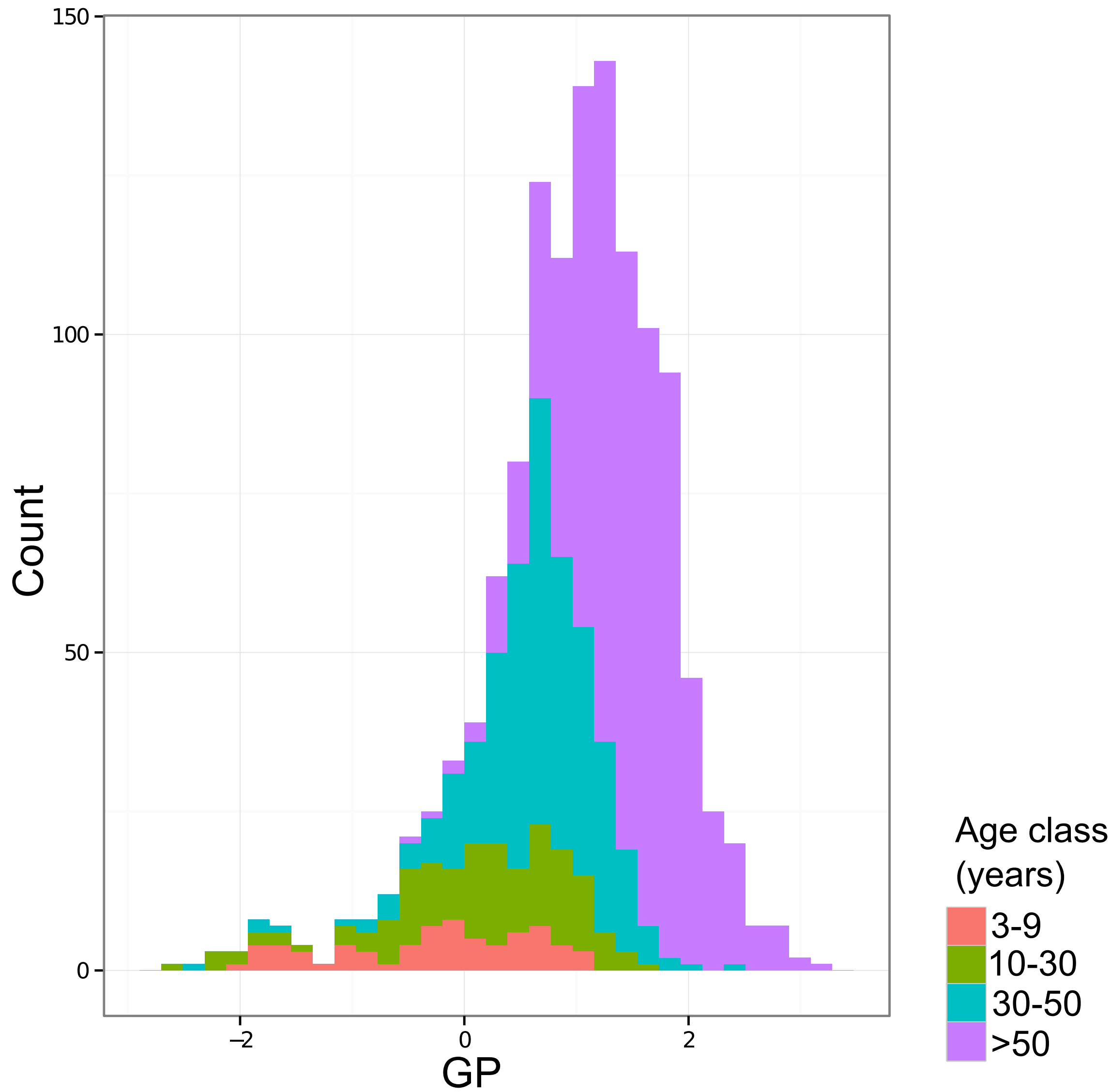


Figure 2.8

Photographic example of a hillside slump at Wanang. For scale, the figure in yellow in the upper center portion of the image is an adult man with his arms raised. (Photo: George Weiblen)

Figure 2.8

CHAPTER 3

Host associations and beta diversity of foliar fungal endophytes in New Guinea rainforest trees

Introduction

Symbiotic relationships between fungi and plants span deep evolutionary history, from the colonization of land by plants (Simon et al. 1993) to contemporary facultative and obligate interactions between fungi and plant roots, stems, and foliar tissue. A growing body of research has shown that fungal symbionts may strongly influence plant function and plant-herbivore interactions in ways that could shape distributions of biodiversity at large scales (Peay et al. 2013). In particular, foliar fungal endosymbionts have been shown to mitigate pathogen damage (Arnold 2003, Busby et al. 2013) and influence plant insect interactions (Breen 1994, Omacini et al. 2001). Despite the apparent ecological importance of fungal endophytes, we have only a nascent understanding of fundamental processes that structure endophyte communities in forest systems (U'Ren et al. 2012, Zimmerman and Vitousek 2012). In this work, we evaluate two hypotheses for ecological processes that determine the diversity and structure of foliar endophyte communities across spatial scales; host associations and dispersal limitation.

Foliar fungal endophytes are ubiquitous to photosynthetic land plants and lichens, occupying healthy tissues without causing outward signs of infection (Petrini 1991, Arnold and Lutzoni 2007). Most fungal endophyte taxa are horizontally transmitted among diverse photobiont taxa with colonies occupying small patches within the plant tissues (Arnold and Lutzoni 2007) while the systemic endophytes of temperate grass species (Saikkonen et al. 1998, Schardl et al. 2004) are often vertically transmitted and involve a limited set of taxa in the Clavicepitaceae (Rodriguez et al. 2009). Interactions between the host plant and fungal endosymbionts span the spectrum from mutualism to commensalism to parasitism (Faeth and Sullivan 2003) although they are most often thought beneficial to their hosts (Carroll 1988, Wilson 1995, Saikkonen et al. 1998, Rudgers et al. 2012).

Two ecological processes are hypothesized to play fundamental roles in structuring diverse fungal endophyte communities; host associations and dispersal limitation. Historically, the Baas-Becking hypothesis, "everything is everywhere, the environment selects", would predict that microbial species disperse widely and that their survival to reproduce is determined by local environment including associations with particular host species. An endophyte community shaped by host associations would demonstrate a correlation of endophyte species composition with host or with the local edaphic conditions that condition the host's distribution. Depending on the degree of specificity in host associations, correlation might be found at differing host taxonomical levels or with phylogenetically conserved traits of plant taxa. Alternatively, dispersal limitation theory posits that the probability of an endophyte colonizing a new location is inversely related to the spatial distance between locations. Dispersal is a fundamental process that structures biotic communities in space and time (e.g. Nekola and White 1999, Soininen et al. 2007). If endophyte species are primarily limited by their dispersal ability, we predict that adjacent communities will be more similar than are more distant communities. Both host associations and dispersal limitation predict species turnover with distance. However, whereas the host association hypothesis implies that the distribution of individual microbial taxa depend on their evolved host associations and thus predicts correlation at the spatial structure of host individuals and populations, the dispersal limitation hypothesis implies a stochastic process by which communities are assembled from the regional species pool (Hubbell 2001, Condit et al. 2002). We utilized the large, contiguous and stable rainforests of New Guinea to provide unique insight into the relative importance of host association, dispersal limitation and their interaction in structuring fungal endophyte communities.

Factors affecting foliar fungal endophyte community composition have been examined primarily in the temperate zone (e.g. U'Ren et al. 2012) and to a lesser extent in the tropics. U'Ren et al. (2012) showed strong geographic structure driven by both abiotic variables and host associations at a continental scale in temperate and boreal forest fungal endophyte communities. In the tropics, elevational gradients (Zimmerman and Vitousek 2012) and variation in soils (Higgins et al. 2014) strongly influence endophyte community structure. To our knowledge, no study has investigated host associations of endophytic fungi across a phylogenetically diverse set of rainforest trees and turnover of community diversity in the absence of strong ecological gradients.

Variation in endophyte community composition emerging from host associations and dispersal limitation may have significant consequences for forest community ecology. For example, the presence of fungal endophytes has been shown to decrease foliar pathogen damage in *Theobroma cacao*, an economically important tropical tree (Arnold 2003). Such defensive mutualisms, could lead to a competitive advantage to hosts (e.g. Clay and Holah 1999, Booth 2004) in the presence of pathogens or herbivores and thereby might influence structure of rainforest tree communities. Regardless of the nature of these symbioses, foliar fungal endophytes represent a cryptic reservoir of biodiversity. Understanding factors shaping the distribution of endophytic fungi could aid in the discovery of diverse secondary metabolites novel bioactive compounds (Higginbotham et al. 2013, Ortega et al. 2013).

With the goal of understanding distributional patterns of foliar fungal endophytes, we addressed four questions concerning the endophyte communities of New Guinea rainforest trees.

1) How much do fungal endophyte communities differ across host tree species? Are differences in endophyte community structure explained by phylogenetic distance among hosts?

2) Are chemical and structural features of the host's leaves a significant factor in structuring foliar fungal endophyte communities?

3) Is endophyte community composition related to the spatial distance between host trees sampled at the same location? What portion of endophyte MOTUs are shared among trees at a regional scale?

Materials and Methods

To test hypotheses relating to community structure in foliar fungal endophytes in rainforest trees, we sampled foliage in mature lowland wet rainforests of Papua New Guinea, including the fully mapped Wanang 50 ha forest dynamics plot (Vincent et al. 2015). Fungal endophytes were sampled from a phylogenetically diverse group of rainforest tree species following standard protocols for isolation and culture (Arnold et al. 2001, Arnold et al. 2007). Endophytes sampled were sequenced for the fungal ribosomal genetic barcode ITS region and grouped into 95% similar molecular operational taxonomic units (MOTUs). Data were analyzed in a multivariate framework to take advantage of our spatially explicit, high dimensional data and address specific questions on factors affecting patterns of local variation and regional turnover in fungal endophyte community composition.

Study sites

The island of New Guinea follows only the Amazon and Congo basins in total forested area (Mittermeier et al. 1998) with 33 million hectares on the eastern half of the island in Papua New Guinea (Shearman 2008, Shearman and Bryan 2011). Approximately 19 million hectares (Shearman 2008, Shearman and Bryan 2011) of this forest area are lowland rainforest. Although threatened by deforestation (Shearman 2008), the ever wet lowland rainforests of Papua New Guinea are remarkably intact constituting an essentially contiguous forest landscape.

Endophytes were sampled in mature lowland wet rainforest in the Madang and East Sepik provinces of northern Papua New Guinea during 2010 and 2011 (Figure 3.1A). In 2010, endophytes were sampled exclusively in the Wanang forest dynamics plot (FDP) and in 2011, samples were obtained at the Wanang FDP and, Ohu and Wamangu sites. The Wanang FDP is set up according to protocol developed by the Smithsonian Center for Tropical Forest Science (CTFS), a global network of forest plots (Condit 1995). As in other plots across the network, all trees larger than 1cm in the Wanang FDP have been measured, tagged, mapped and identified to species. Detailed site descriptions of Ohu, Wamangu, and Wanang forests and the established forest dynamics plot at Wanang can be found in Novotny et al. (2007), Craft et al. (2010) and Vincent et al. (2015).

Host species sampled

Host tree species were chosen to encompass a broad phylogenetic sample of common rainforest trees of lowland New Guinea (Figure 3.1B). In both years, three species from each of the diverse and widespread *Ficus* (Moraceae) and *Macaranga* (Euphorbiaceae) genera were sampled to determine differences between endophyte communities associated with closely related host species and those associated with host species at greater phylogenetic distances. Species distribution maps of all sampled species in the Wanang 50 ha forest dynamics plot are provided in Figure 3.2. At least nine host tree species were sampled in 2010 and at each of the three sites in 2011 but with minor differences in host trees sampled among sites (Appendix 3). For example, sampling in 2010 at the Wanang site included the broadleaved gymnosperm, *Gnetum gnemon*, but not *Psychotria micrococca*. In 2011, sampling at Ohu included *Macaranga aleuritoides* in place of *Macaranga falacina* at Ohu and at the Wamangu site, *Psychotria leptothyrsa* could not be located. Previous work on rainforest trees at Wanang (Whitfeld et al. 2012b, Whitfeld et al. 2014) produced measurements of foliar traits (specific leaf area, leaf nitrogen, and leaf carbon) for each of the host species sampled at the Wanang site in this study. Samples collected at Ohu and Wamangu in 2011 were opportunistic and not spatially explicit within those sites.

Leaf and endophyte sampling

All samples were collected from lamina of fully expanded, full sun leaves showing no signs of disease. In 2010, leaves were sampled as follows: six fully expanded full sun leaves were collected from each sampled host tree. Six trees per species were sampled, except in the case of *Psychotria leptothrysa* for which two trees were sampled. Leaves were returned to the field lab where they were surface sterilized using successive washes in solutions of ethanol and bleach (Arnold et al., 2001). Subsequently, four ~2mm^2 square segments were excised from each leaf. Each leaf segment was plated on 2% malt extract agar (MEA) media. Emergent fungal colonies were moved to sterile culture tubes containing 2% MEA and transported to University of Minnesota for DNA isolation and sequencing.

Collections in 2011 were conducted similarly except that ten fragments of approximately 2mm^2 were excised, surface sterilized and each placed directly into a sterile Eppendorf tube with 2% MEA (Arnold et al. 2007). Tubes were exported by the University of Papua New Guinea and imported by University of Minnesota under APHIS permits P526P-07-06697 (2010) and P526P-11-02984 (2011) for culturing and DNA sequencing. Endophytes samples from 2010 and 2011 are hereafter referred to by site and year: Wanang 2010, Wanang 2011, Wamangu 2011, and Ohu 2011.

DNA extraction and amplification

Cultured fungal tissues were obtained either directly from mini-slants or from petri dish cultures established from the stock mini-slants. Fungal tissue was disrupted using a Qiagen TissueLyser for 1 min at maximum RPM and total genomic DNA was extracted using either Qiagen Plant Mini Kit (Qiagen) or Sigma Extract-and-Amp kits (find info).

After DNA extraction, polymerase chain reaction (PCR) was used to amplify the Internal Transcribed Spacer (ITS) region, a commonly used fungal barcoding region of the ribosomal RNA (rDNA). Primers were selected to produce amplification of rDNA covering the ITS1 and ITS2 regions. Reactions were carried out in 20 µL volumes with 10 µM final concentrations of the forward ITS1-F and reverse ITS4 primers (White et al.

1990, Gardes and Bruns 1993) under the following conditions: initial denaturation 94°C for 10 min, followed by 40 cycles of 94°C for 45 sec, 55°C for 45 sec, 72°C for 90 sec, and final elongation 72°C for 5 min.

Amplified fragments were sequenced using Big Dye sequencing reagents and protocols (Applied Biosystems, Foster City, CA, US) and data was collected using an ABI Prism 3730XL DNA Analyzer (Applied Biosystems, Foster City, CA, US). Sequences were processed for quality and manually trimmed using Geneious 6.1.8 (Biomatters Limited) and used in basic local alignment search tool (BLAST) (Altschul et al. 1990) queries of the fungal User-friendly Nordic ITS Ectomycorrhiza Database (UNITE) database (version 7) (Kõljalg et al. 2013) for DNA sequence based identification. The UNITE database was originally designed for use identifying ectomycorrhizal fungi (Kõljalg et al. 2005) but has since been extended to include over 300,000 high-quality ITS sequences from all major lineages of fungi, including the Ascomycota of these endophyte taxa. Sequences were deposited in GenBank as accession numbers KR014946-KR017025.

Endophyte ITS sequences were clustered into MOTUs based on 95% ITS sequence similarity using the MOBYLE workflow (Monacell and Carbone 2014) that streamlines MOTHUR (Schloss et al. 2009) and ESPIRIT (Sun et al. 2009). Additional details on these clustering methods are presented in U'Ren et al. (2012) and later compiled into the workflow described in U'Ren et al. (2014). The 95% sequence similarity level for MOTUs corresponds approximately to the species level in endophyte phylogenies (Arnold et al. 2007) and allows comparison to relevant recent studies (U'Ren et al. 2012, Zimmerman and Vitousek 2012, Higgins et al. 2014). Sequences from

2010 and 2011 were clustered and analyzed separately due to differences in sampling intensity, collection method, and culturing.

Statistical analyses

All statistical analyses and data manipulation, except where explicitly stated, were carried out in R 2.15.1 (R core team). We calculated descriptive summary statistics and produced visualizations of multivariate patterns in endophyte community composition for all sites. Differences in MOTU richness (number of different MOTUs) and abundance (quantity of culture endophytes) among host species and genera were tested using ANOVA and Levene's test of homogeneity of variance. Species accumulation curves and standard deviations were constructed by repeated random addition of isolates without replacement. The distributions of endophyte MOTUs among host species and sampling sites were plotted as quantitative webs (Lewis et al. 2002). Variation in endophyte community composition among sampled trees was visualized using non-metric multidimensional scaling (NMDS) on a Bray-Curtis dissimilarity matrix (Bray and Curtis 1957). The Bray-Curtis matrix was square root transformed to decrease the influence of abundant MOTUs. Pairwise phylogenetic distance between sampled host species estimated from were estimated using branch lengths in a maximum likelihood phylogeny inferred under a general time-reversible model and accounting for rate heterogeneity and invariant sites (Silvieus et al. 2008, Novotny et al. 2010, Whitfeld et al. 2012a) using the ape package (Paradis et al. 2004).

The association of endophyte community structure with host species, phylogeny, or foliar traits was analyzed in a multivariate statistical framework. We performed a simple Mantel test on the correlation of the above transformed Bray-Curtis matrix and a matrix representing the pairwise phylogenetic distances among sampled host trees to test for a relationship between endophyte community composition and the phylogenetic differences of the host trees. Significance test were produced using 999 permutations of the Bray-Curtis matrix.

Differences in the species composition of endophyte communities among host species and genera were evaluated using permutational multivariate analysis of variance (PERMANOVA) (Anderson 2001), implemented as “adonis” in the R vegan package (Oksanen et al. 2013). PERMANOVA determines the significance of variance in distance matrices associated with *a priori* groups such as host taxa by comparing the observed community matrix to a non-parametric null distribution based on 999 permutations of the observed matrix. Permutations evaluate the null hypothesis of exchangeability among groups. It is possible that PERMANOVA approaches may be susceptible to elevated type I error should variances across groups be heterogeneous. We tested the assumption of homogeneity of variance using a permutational test of multivariate group dispersions (PERMDISP) (Anderson 2006, Anderson et al. 2006), implemented as “betadisper” in the vegan R package (Oksanen et al. 2013). Global and pairwise permutation tests were performed to test differences in dispersions (multivariate variances) between groups (host species and genera) under distributions based on 999 permutations.

We evaluated correlations of fungal community diversity with functional leaf traits to determine if such traits represent meaningful variation in leaf habitability or availability for colonization by endophytes. Functional traits of specific leaf area (SLA), foliar nitrogen, and foliar carbon, were characterized for Wanang forest species in previous research (Whitfeld et al. 2012b) and correlate with plant function (Wright et al. 2004) and life-history strategy (Wright et al. 2010),. Specific leaf area (fresh leaf area/dry leaf mass, $cm^2 g^{-1}$) reflects the allocation of resources to photosynthetic tissue versus structural features (Agrawal and Fishbein 2006). Foliar nitrogen and carbon (percent leaf mass) are correlated with plant photosynthetic rate (Reich et al. 1994) and leaf toughness and longevity (Poorter et al. 2004), respectively. We explored correlation between leaf functional traits of host trees at Wanang and endophyte community composition using distance-based redundancy analysis (db-RDA) (Legendre and Anderson 1999, Anderson and Willis 2003). Ordination was performed on a square root transformed Bray-Curtis matrix of endophyte community composition and both the full set of host leaf traits and each trait individually. Significance and proportion of total variation in endophyte community composition explained with permutational ANOVA (199 permutations). We lacked leaf trait data for two *Psychotria* host species and these were excluded from analyses.

The spatial structure in endophyte community composition was determined across local and regional scales to test for dispersal limitation. We tested for spatial structure in endophyte community composition at the local scale using precise spatial coordinates of each sampled tree available in the Wanang dataset. Mantel tests, implemented as "mantel" in the vegan package (Legendre and Legendre 2012, Oksanen et al. 2013), evaluated structure of fungal endophyte community composition across all sampled trees, as well as evaluating spatial structure of endophyte communities across congeneric or conspecific hosts across the Wanang plots. For each mantel test, correlation was evaluated between a pairwise matrix of Euclidean distances between host trees and a square root transformed Bray-Curtis matrix of endophyte community composition.

We investigated beta diversity, a measure of differences in community composition (species turnover) between sites (Anderson et al. 2010), using the Chao-Sorensen index (Chao et al. 2005). This measure incorporates a probabilistic adjustment for species that might be present but are unobserved as might be expected with undersampling or hyperdiverse communities (e.g. Novotny et al. 2007). The resulting index is a proportion of species shared between two sites, corrected for unobserved species shared between pairs of sites. Collections were rarefied to equalize sample sizes for analyses of beta diversity between the three regional sites, genera and species. Although this index has been shown to be robust to rarefaction and unequal sample sizes (Chao et al. 2005), we analyzed both the rarefied datasets and those without rarefaction to explore how uneven sample sizes might affect estimates of beta diversity. We also investigated the sensitivity of our estimate of beta diversity to the exclusion of either abundant or rare taxa. To test the effect of excluding abundant MOTUs we produced two new datasets, one in which the most abundant MOTU was excluded and the other which has the top five most abundant MOTUs excluded. We tested the effect of excluding rare endophytes by subsampling to create three new datasets: singleton MOTUs excluded, singletons and doubletons excluded, and finally singletons, doubletons, and tripletons excluded. Results of beta diversity estimates from this sensitivity analysis were then plotted along those from the full dataset to visualize changed in our similarity measure as we excluded different parts of the endophyte community from our analysis.

We tested for underlying genetic structure by host and site in abundant widespread generalist MOTUs using PERMANOVA. To pick genotypes within abundant MOTUs we subdivided endophytes belonging to these large groups into 1% similar MOTUs determined by a global clustering analysis. These new MOTU designations, reflecting underlying genetic variation in abundant MOTUs, were used to make Bray-Curtis distance matrices of sampled host trees for each abundant MOTU. We then tested for effects of site, host species, and the interaction of the two in PERMANOVA analyses. We used the ‘adonis’ function in the R vegan package as an alternative to AMOVA, as these two analyses are essentially identical since they use the same method of partitioning variance in distance matrices.

Results

We obtained sequence for the ITS1-2 rDNA barcoding region for 2,079 cultured fungal endophytes collected over two years and among three sites in Papua New Guinea lowland rainforest (Figure 3.1A). Amplicon length was variable, but was on average 628 base pairs. The samples were collected from 11 different host tree species representing five genera from five different plant families (Figure 3.1B) that exhibit a range of population densities and spatial distributions in the Wanang field site (Figure 3.2).

DNA sequences were not obtained from all fungal cultures because of attrition and contamination of cultures generated under rudimentary field conditions, or because some cultures were bacterial endophytes (Table 3.1). Culture rates, the proportion of leaf fragments that produced fungal endophytes, differed among sites (Table 3.1). Wanang 2011 collections had a lower rate of sequencing success than did Ohu and Wamangu collections (Table 3.1) and thus different size data sets were produced for Ohu, Wamangu, and Wanang in 2011.

The 2010 data set includes 670 ITS sequences representing 54% of the 1,241 cultures attempted at the Wanang location. The sequences clustered into 61 MOTUs at 95% ITS similarity (Table 3.1). Neither MOTU richness (ANOVA p=0.255, Levene's test p=0.3044) nor abundance (ANOVA p=0.722, Levene's test p=0.5004) varied significantly between host species. A total of 1,409 sequences were obtained for 2011 collections and clustered into 191 MOTUs. Species accumulation curves were similar for different sites (Figure 3.3). A rarefied data set, standardized to 335 sequences per site, contained a total of 154 endophyte MOTUs in total and an average of 72 different MOTUs per site in 2011. The taxonomic identity, host tree species, location and year collected, and GenBank accession numbers for 2079 cultured endophytes are provided in Appendix 4.

Host-associated community structure

Permutational multivariate analysis of variance (PERMANOVA) was carried out to test for differences in endophyte community composition among host species or genera. Results of PERMANOVA analyses show that endophyte communities differed significantly among host tree species ($F_{7,40}$=1.643 p=0.001 r^2=0.223) and host genera ($F_{3,44}$=1.6742 p=0.004 r^2=0.102) at Wanang in 2010. Analogous PERMANOVA models, testing for differences in community composition between host species and between genera, were produced for each site sampled in 2011 and for the complete 2011 dataset (Table 3.2). For those sites from which more sequences were recovered (Wanang 2010 and Wamangu 2011) and for the full 2011 dataset, significant differences between host species ($p<0.001$, $r^2=0.185$) and genera ($p<0.001$, $r^2=0.079$) were observed, whereas those sites (Ohu 2011 and Wanang 2011) sampled less intensively did not show significant differences between host groups (Table 3.2). While sampling intensity affected our ability to detect statistically significant differences, the proportion of variance explained by host species remained relatively constant (Table 3.2). Tests among sites showed no significant difference in endophyte community composition (PERMANOVA $p=0.128$ $r^2=0.032$).

We used permutational tests of multivariate dispersion (PERMDISP) to determine if endophyte communities differed in variability across host species or genera. Differences in multivariate dispersion could produce misleading PERMANOVA results or indicate meaningful differences in community composition among host taxa. Results of PERMDISP analyses indicate that variation in endophytes community composition at Wanang in 2010 was homogenous across host species ($F_{8,41}=2.085$, $p=0.056$, Table 3.2). However, inspection of pairwise permuted differences revealed that some pairs of host species differed significantly in variability of endophyte communities (*Gnetum gnemon* and *Ficus hahliana* p=0.012, *Gnetum gnemon* and *Macaranga bifoveata* p=0.023, *Gnetum gnemon* and *Ficus pungens* p=0.011). Results of PERMDISP performed for each site in 2011 show no evidence of heterogeneity and pairwise comparisons confirmed that this pattern was consistent across host taxa within each site. Even though there were minor deviations from ideal balanced sampling and homogenous patterns of variation, we do not believe they are substantial issues. Recently Anderson and Walsh (2013) tested the sensitivity of PERMANOVA to deviations from ideal sampling. They showed that results are robust to heterogeneity of group dispersions when sampling is even. Thus, we are confident in our results from our 2010 Wanang dataset despite the small difference in group dispersions we detected. Results from other sites should be considered with slight caution due to uneven sampling, although they do not represent qualitative departures from our Wanang findings nor was the assumption of homogeneity of variance.

We used Non-metric Multi-Dimensional Scaling (NMDS) to produce a visualization of variation in community composition. The resulting two-dimensional NMDS showed significant variation in endophyte community composition (Figure 3.4) among hosts at both the level of species and genera. Standard deviation ellipses were projected on the ordination plot to visualize multivariate dispersion in community composition by host species (Figure 3.4). These ordination results correspond to our PERMANOVA results (Table 3.2), showing some differentiation by host taxa, and the results together demonstrate differences in community composition due to host taxa.

We then determined if differences in community composition between host taxa were correlated with host leaf traits as a possible explanation for apparent differences across host taxa. Permutational ANOVAs testing for correlation between individual traits and variation in endophyte community composition were similar to results from the full set of leaf traits in terms of statistically significant but weak correlation (Table 3.3). Overall, host leaf structural and chemical traits (SLA, Leaf N, and Leaf C) showed a weak but statistically significant correlation with variation in endophyte community composition (Table 3.3).

Quantitative host-endophyte association webs reveal an endophyte community composed of a few abundant widely distributed MOTUs and many rare and narrowly distributed endophytes. Representations of host species within individual sites sampled in

2011 show similar patterns with results for Wanang 2010 (Figure 3.5A), showing a consistent pattern of few abundant endophyte MOTUs present in all host species and many rare MOTUs spread among host taxa. This pattern of few abundant and many rare endophytes extends to the site level (3.5B) where the few abundant fungal MOTUs are present at all sites and less abundant taxa show more varied patterns of distribution.

We tested for an effect of host relatedness on community composition of fungal endophytes. The results of a simple Mantel test showed that dissimilarity of endophyte composition was not appreciably correlated with host plant phylogenetic distance nor was the correlation statistically significant ($p=0.604$ $r=-0.025$).

Spatial distribution

We explored beta diversity of fungal endophytes at both the scale of tens to hundreds of meters between sampled trees in the Wanang forest dynamics plot and over approximately 50 to 270 km distance between sampling sites. In the Wanang forest dynamics plot we used mantel tests for correlation between euclidean distance between host trees and Bray-Curtis dissimilarity of endophyte communities. Results of mantel tests showed no evidence of trends in endophyte community similarity related to spatial proximity between trees in general, nor within host genera or species (Appendix 5). Pairwise comparisons of 2011 collections at Ohu, Wamangu, and Wanang produced Chao-Sorensen values indicating that a high proportion of MOTUs were shared between endophyte communities (Figure 3.6). A pattern of low species turnover was consistent in pairwise comparisons of sites, genera, and species (Table 3.4). Rarefied samples showed similar but slightly lower values of Chao-Sorensen similarity (Table 3.4). Excluding either rare or abundant endophyte MOTUs revealed that our results are sensitive to inclusion of these groups. Similarity estimates increased substantially when rare endophytes were excluded and likewise decreased when one or more abundant MOTUs were excluded from the dataset (Figure 3.6).

We tested for underlying genetic structure in four abundant MOTUs defined at the 95% similarity level using ITS variation within MOTU 5 (n=62), MOTU 6 (n=863), MOTU 8 (n=245), and MOTU 9 (n=86). We found signal for significance of site and host species for MOTU 6 but not the interaction of the two (Adonis: site - p=0.001 r^2=0.06, host species - p=0.018 r^2=0.11, site*host species - p=0.168 r^2=0.13). Results for variation in the other abundant MOTUs (5, 8, 9) did not show signal of host or site effects perhaps because of the smaller number of sequences available compared to MOTU 6.

Discussion

We used cultured endophytes to examine the relative importance of host association and dispersal limitation in structuring endophyte community composition in the diverse vegetation. Community composition of endophytes differed among host tree species but variation in endophyte composition was not correlated with host phylogeny. Endophyte community similarity at the local scale was not related to the spatial proximity of host trees and communities were highly similar among sites separated by hundreds of kilometers across a continuous lowland rainforest.

Host-associated patterns of endophyte distribution

Dissimilarity of endophyte composition was not correlated with host plant phylogenetic distance even among distantly related seed plants including a broad-leaved gymnosperm (*Gnetum gnemon*) and several angiosperms clades. Although previous studies of endophyte community ecology have examined multiple plant lineages (e.g.

Arnold and Lutzoni 2007, Higgins et al. 2007), ours is the first to explicitly investigate the correlation of host plant phylogenetic relationships to endophyte community composition. However, phylogenetically conserved foliar traits including SLA, nitrogen content, and carbon content (Whitfeld et al. 2012b) were weakly correlated with endophyte community composition. Leaf traits accounting for up to 19% of the variation among communities (Table 3.3) demonstrates that leaf quality matters to endophytes. It is also likely that additional features of the host neighborhood, local environment (Arnold and Herre 2003, Pan et al. 2008) or life history traits other than those we measured are more strongly associated with endophyte community composition than the foliar traits we evaluated. Nonetheless, host tree identity explained a significant proportion of variation among endophyte communities (up to 40%) and would therefore seem likely to influence which fungi are capable of colonization and and survival.

At each of the three sites we examined, the endophyte community represented in cultured MOTUs was dominated by a few generalists that were abundant in all host tree species, a pattern observed across two sampling years at Wanang despite somewhat different sampling methods. Differences observed among endophyte communities between host tree species resulted primarily from differences in the presence of extremely rare MOTUs (e.g, singletons and doubletons). Thus, it appears that variation in endophyte composition among host taxa is defined by quantitative differences in generalist endophyte occurrence and presence of rare MOTUs unique to certain hosts. Results of PERMANOVA provided statistical evidence to support the hypothesis that tree species and genera support somewhat different endophyte communities with overlap in very widespread and common taxa present in almost all communities.

Our observation of endophyte occurrence patterns in rainforest trees agree with findings in tropical trees (Cannon and Simmons 2002, Arnold and Lutzoni 2007), grasses (Higgins et al. 2011, Higgins et al. 2014), and seeds (Kluger et al. 2008), suggesting that a host generalist life history strategy is predominant in foliar endophytic fungi, at least at the species or MOTU level. By contrast, high host specificity has been demonstrated in tropical fungi decomposers (e.g. Gilbert and Sousa 2002, Augspurger and Wilkinson 2007, Kembel and Mueller 2014), and for epiphytic fungi (Kembel and Mueller 2014) although the latter exist just above the leaf epidermis below which endosymbionts are located.

Spatial patterns of endophyte distribution

We found no correlation between endophyte community composition and Euclidean distance among sampled hosts, a pattern of widespread occurrence observed from the local scale of tens of meters to the regional scale of hundreds of meters. The absence of spatial patterns in the composition of endophyte communities among all trees sampled, within tree genera, or within tree species suggests either that dispersal limitation does not play a significant role in shaping the distribution of endophyte species across large distances or the size of our sample was insufficient to detect differences. Moreover, although sampled trees may not have fully captured differences in spatial distributions of different tree species at Wanang, we observed an even distribution of endophyte community composition across tree species that exhibit a broad range of population densities and spatial distributions. For example, *Gnetum gnemon* is abundant and shows an even distribution across the Wanang plot, *Ficus hahliana* is abundant but is restricted to drainages, and *Ficus pungens* is sparse and found primarily in tightly aggregated patches. Host density and degree of spatial clustering may play a role in influencing endophyte communities, yet we could identify no patterns consistent with such a hypothesis. Taken together, the results of our fine-scale spatial analysis support a conclusion that differences in endophyte community composition between tree species may be shaped more by host associations rather than by an underlying process of dispersal limitation.

Although patterns of endophyte community turnover in relation to environmental gradients are consistent in literature, the absence of significant abiotic gradients (e.g. climate, soil, elevation) and the widespread distribution of host plant diversity uniquely allows us to address the question of whether dispersal limitation alone will structure endophyte communities. or. Our results suggest that beta diversity, endophyte species turnover between sites (Anderson et al. 2010), is low and essentially constant even over the very large distances from 50 to 270 km in New Guinea rainforests. Our results are in stark contrast to previous research showing a strong decrease in similarity of endophyte community composition with increasing distance between host trees (Arnold 2003). Previous studies at larger spatial scales have found substantial differences in endophyte community composition in relation to abiotic environment and differences in host community composition (U'Ren et al. 2012, Zimmerman and Vitousek 2012, Peay et al. 2013, Higgins et al. 2014), suggesting that turnover in many fungal endophyte communities are strongly affected by ecological gradients and turnover of plant species. Additionally, recent studies of soil fungi have found that variation in both fungal richness and composition is tied to changes in host plant composition and climatic variables between sites (Gao et al. 2013, Tedersoo et al. 2014, Prober et al. 2015). We conclude that the large area of comparatively homogenous mature lowland rainforest has provided a matrix of hosts allowing dispersal and homogenization of the PNG forest endophyte communities over time.

Notably, low beta diversity is evident among other taxa with a potential for dispersal, the herbivorous insects, as well as rainforest trees, including some of the same host genera (*Ficus*, *Macaranga*, and *Psychotria*) (Hulcr et al. 2007, Novotny et al. 2007). Interestingly, herbivores that are widespread and even in distribution across the landscape exhibited low host specificity in their feeding (Novotny et al. 2002). The low beta diversity of fungal endophytes we found in these lowland rainforests may possibly be explained by long distance spore dispersal, or most likely a stable and homogenous host environment over significant time. If generalism is predominant, as we have seen, and as has been observed in endophytes of tropical grasses (Higgins et al. 2011, Higgins et al. 2014), and host availability is not limiting, movement through a contiguous lowland rainforest lacking any significant dispersal barriers will occur over time. Alternatively, these sites could represent discrete communities that are in equilibrium in regards to species composition, and inference supported by evidence of underlying genetic structure associated with both hosts and sites in the most abundant MOTU of our study. Although this pattern was restricted to the most abundant MOTU of the four we investigated and based on ITS sequence only, the result is consistent with that of Oono et al. (2014) for temperate endophyte populations in which genetic structure due to spatial distance among populations was detected. Further sampling and loci will shed light on whether widespread generalist endophyte taxa are in migration-drift equilibrium.

One possible limitation of our study relative to metagenomic studies (e.g. Zimmerman and Vitousek 2012) is that our dataset is small and likely biased by culturing. While our sampling does not appear to fully capture local species richness, as accumulation curves show no sign of an asymptote, nor do most results of most studies of fungal endophyte communities, as these may be tremendously diverse (Arnold and Lutzoni 2007). Culture independent and culture-based methods (Allen et al. 2003, Arnold 2007, Higgins et al. 2011) will be valuable in future studies of PNG forest endophyte communities as each method has potential biases and strengths in detection of fungal taxa (Tedersoo et al. 2010).

Conclusions

The results of our analyses and data visualizations suggest that host associations play a role in shaping fungal endophyte community composition in rainforest trees. This pattern of a significant but weak and variable host effect was found despite sampling that captured large differences in host plant spatial distributions and population densities, host phylogenetic relatedness, and variation in host foliar functional traits. Patterns of endophyte occurrence, both within sites and in aggregate, revealed few abundant host generalists and many rare taxa. Beta diversity of fungal endophytes was low between sites situated in a continuous and abiotically homogenous lowland rainforest and separated by tens or hundreds of kilometers. Such a stark finding suggests that in the absence of environmental gradients and changes in host plant community composition, fungal endophyte communities may be very similar across large spatial scales and that this similarity is due to a few common and widely dispersed fungal taxa. The pattern of low regional beta diversity, if consistent among rainforests, may also suggest lower estimates for numbers of fungal species globally (Arnold et al. 2000, Blackwell 2011). Considered together, our conclusions support the notion that host associations play a weak but relatively more important role than dispersal limitation in shaping the distribution of fungal endophyte communities in terms of both local variation and regional turnover.

Table 3.1

Culture rate, sequencing rate, abundance and richness of MOTUs sampled by site. Culture rate is the percentage of leaf samples from which at least one endophyte culture was obtained. Sequence rate is the percentage of cultured endophytes that resulted in ITS sequences of sufficient quality for further analysis. Collections were rarefied to the smallest community sample size (335 sequences) by selecting sequences randomly without replacement within communities. Richness is the number of different MOTUs obtained.

Table 3.1

Collection	Culture rate (%)	Sequence rate (%)	Endophyte Abundance	Endophyte richness	Rarefied sample richness (n=335)
Wanang 2010	90	54	670	61	46
Wanang 2011	43	49	394	67	61
Ohu 2011	32	65	335	73	73
Wamangu 2011	61	68	680	127	81

Table 3.2

Results of PERMANOVA test for differences in endophyte community composition between host species and genera. Significance values obtained with 999 permutations of the Bray-Curtis dissimilarity matrix for endophyte community composition at the level of sampled trees. The partial r^2 values represent the proportion of variance explained by host species or genera.

Table 3.2

	Host groups			
	species		genera	
site	p	r^2	p	r^2
Wanang 2010	<0.001	0.223	<0.005	0.004
Wanang 2011	n.s.	0.361	<0.05	0.236
Ohu 2011	n.s	0.339	n.s.	0.140
Wamangu 2011	<0.001	0.391	<0.05	0.015
All 2011	<0.001	0.185	<0.001	0.079

Table 3.3

Distance-based redundancy analysis results evaluating the correlation between host leaf traits and a Bray-Curtis dissimilarity matrix of endophyte communities in sampled trees. Leaf traits are specific leaf area (SLA), foliar nitrogen content, and foliar carbon content. Tests were performed for all traits in concert and each trait separately. Significance evaluated with permutational ANOVA. Partial r^2 values represent the proportion of variance explained by host leaf traits.

Table 3.3

	All traits		SLA		Foliar Nitrogen		Foliar Carbon	
Site	p	r^2	p	r^2	p	r^2	p	r^2
Wanang 2010	0.01	0.097	0.08	0.034	0.03	0.034	0.07	0.030
Ohu 2011	0.057	0.179	0.04	0.069	0.17	0.058	0.41	0.051
Wamangu 2011	0.015	0.175	0.04	0.063	0.05	0.063	0.17	0.048
Wanang 2011	0.02	0.189	0.02	0.072	0.32	0.055	0.12	0.062
All 2011	0.077	0.044	0.35	0.016	0.18	0.018	0.06	0.019

Table 3.4

Chao-Sorensen values for similarity of endophyte community composition between sites sampled in 2011; Ohu (OHU), Wanang (WNG), Wamangu (WGU). Values represent similarity of endophyte communities for all host species at each sites and for host species sampled at all sites in 2011. Values for the full data set (not rarefied) and rarefied sets are presented for comparison. Values in the “n” column denote total sample size for the rarefied datasets. For example, the community matrix of endophytes cultured from *Ficus* for each site was randomly sampled to produce datasets of 107 endophytes.

Table 3.4

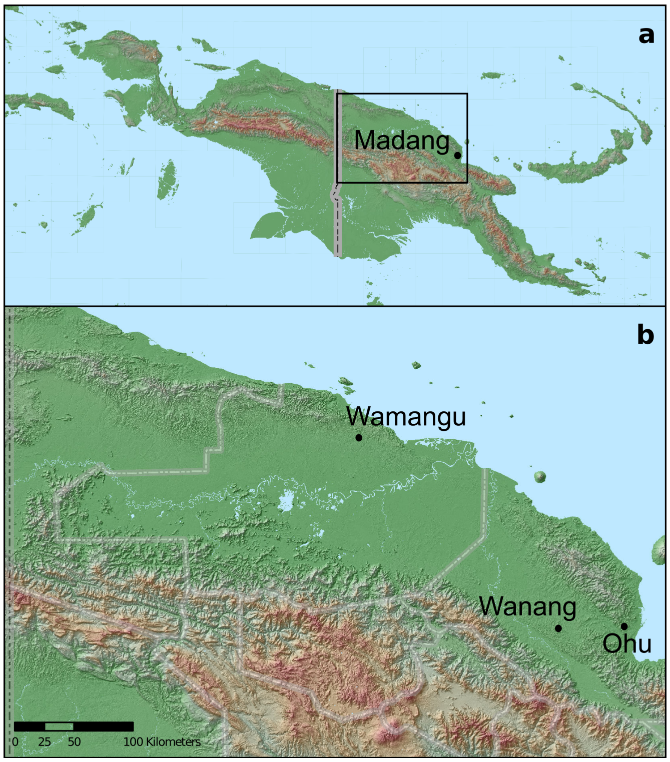
Scale	n	WNG-OHU		WGU-OHU		WNG-WGU	
		rarefied	not rarefied	rarefied	not rarefied	rarefied	not rarefied
Sites	335	0.836	0.849	0.804	0.787	0.790	0.794
Ficus	107	0.923	0.716	0.707	0.716	0.827	0.786
Macaranga	94	0.756	0.753	0.839	0.736	0.780	0.716
Ficus hahliana	25	0.719	0.720	0.461	0.471	0.616	0.721
Ficus pungens	30	0.605	0.681	0.626	0.648	0.645	0.548
Ficus variegata	37	0.669	0.546	0.600	0.583	0.502	0.655
Macaranga bifoveata	27	0.738	0.689	0.443	0.612	0.305	0.637
Macaranga punctata	36	0.557	0.54	0.544	0.654	0.496	0.54
Psychotria micrococca	69	0.863	0.923	0.564	0.557	0.611	0.611
Syzygium longipes	37	0.869	0.855	0.848	0.695	0.601	0.761

Figure 3.1

Sampling locations are shown in the lowlands of northern Papua New Guinea in the Madang and East Sepik Provinces (3.1A). Sites are located in contiguous lowland rainforest in the Ramu (Ohu and Wanang) and Sepik (Wamangu) river valleys. Vegetation, climate, and elevation are very similar for the sites. A diverse set of rainforest trees was sampled at each site (3.1B). Two to three species from widespread and abundant genera (*Ficus* and *Macaranga*) as well as the broadleaved gymnosperm, *Gnetum gnemon* were sampled. The dendrogram shown includes all sampled host species and reflects the phylogenetic hypothesis used in this study (Silvieus et al. 2008, Novotny et al. 2010, Whitfeld et al. 2012a). Dendrogram branch lengths do not correspond to a measure of relatedness.

Figure 3.1

A


a
Madang
b
Wamangu
Wanang
Ohu
0 25 50 100 Kilometers

B

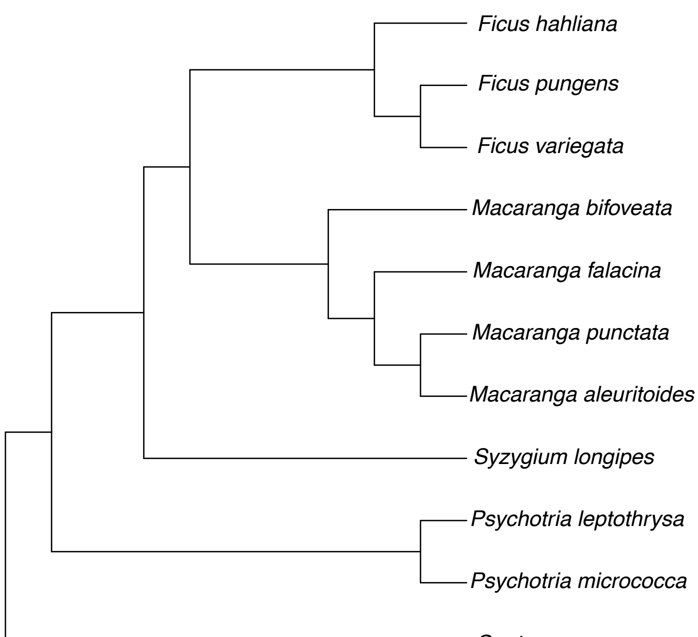

Ficus hahliana
Ficus pungens
Ficus variegata
Macaranga bifoveata
Macaranga falacina
Macaranga punctata
Macaranga aleuritoides
Syzygium longipes
Psychotria leptothrysa
Psychotria micrococca
Gnetum gnemon

Figure 3.2

Spatial distributions in the Wanang 50 ha forest dynamics plot of all sampled host trees and each point corresponds to an individual tree with trunk diameter represented by the size of the point. Axes are scaled in meters for plot dimensions of 500 m by 1000 m. Sampled host trees are shown in red and are found in a linear swath on the left end of plot maps.

Figure 3.2

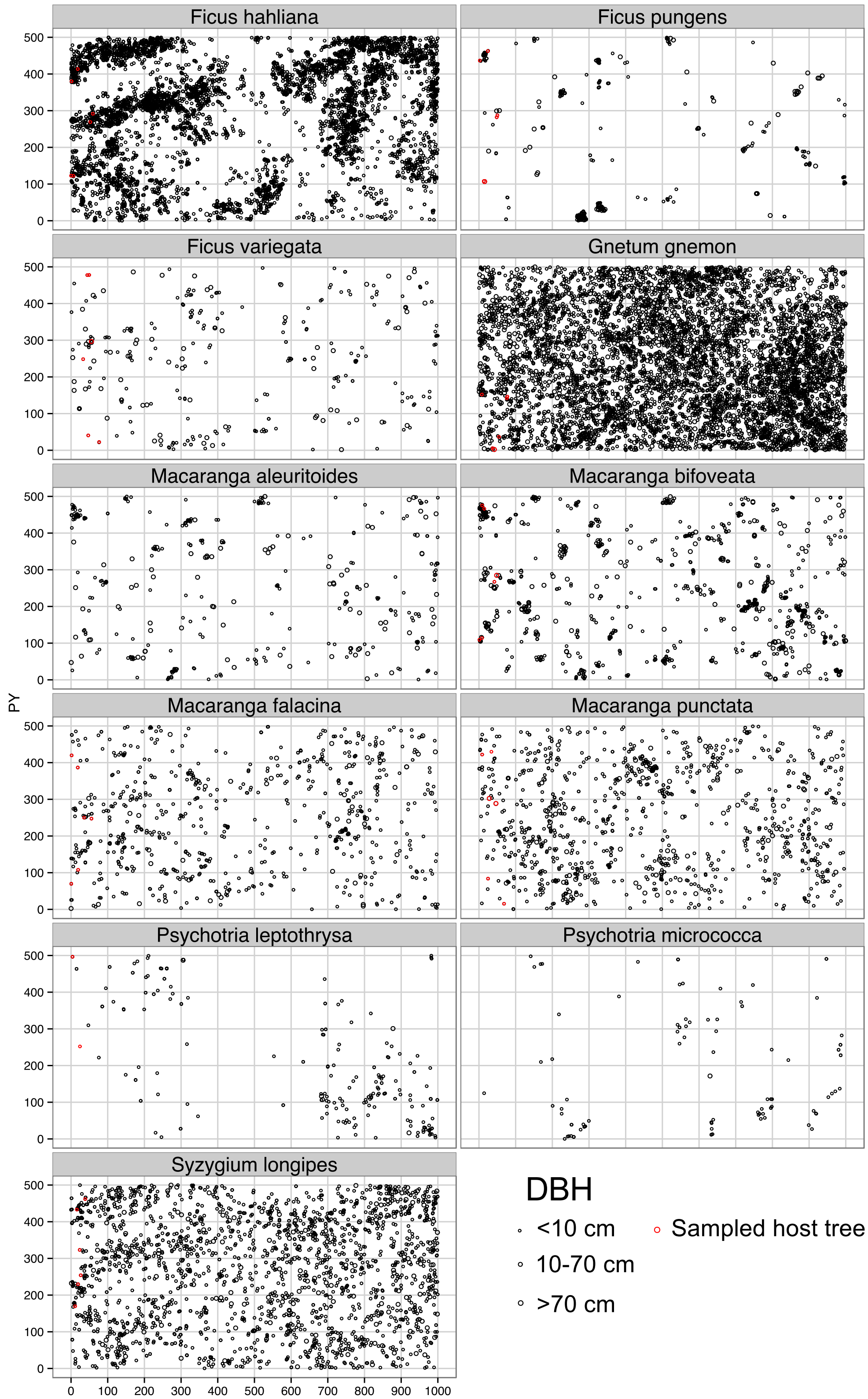

Ficus hahliana
Ficus pungens
Ficus variegata
Gnetum gnemon
Macaranga aleuritoides
Macaranga bifoveata
Macaranga falacina
Macaranga punctata
Psychotria leptothrysa
Psychotria micrococca
Syzygium longipes
PY
PX
0
100
200
300
400
500
600
700
800
900
1000
DBH
<10 cm
10-70 cm
>70 cm
Sampled host tree

Figure 3.3

MOTU accumulation curves of at collection sites in lowland rainforest of Papua New Guinea. Curves represent means of richness values obtained by random draws without replacement from all MOTUs obtained at the site at each sampling level. Standard deviation around the mean is calculated from one hundred random permutations of the data. The number of endophyte cultures recovered differed between sites and years (Table 3.1).

Figure 3.3

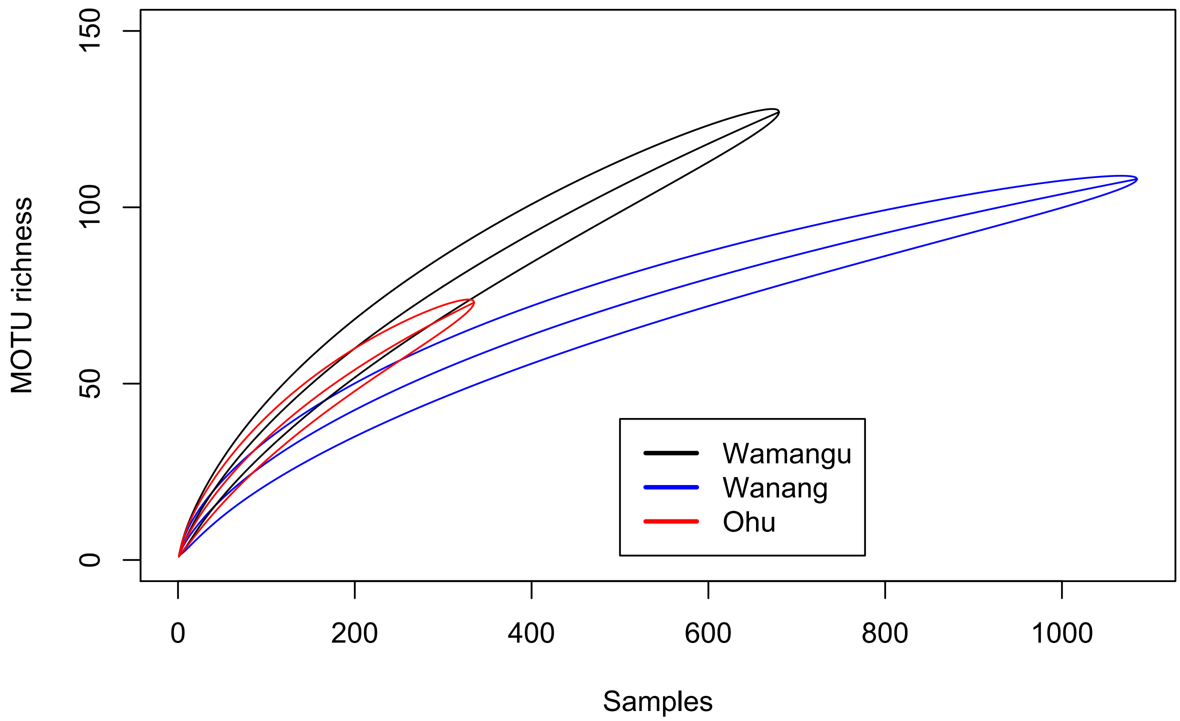

150
100
50
0
MOTU richness
Wamangu
Wanang
Ohu
0
200
400
600
800
1000
Samples

Figure 3.4

Local variation of Wanang 2010 endophyte community composition represented by a two dimensional NMDS (stress = 0.221). Data points represent individual host trees and are colored according to host genera. Standard deviation ellipses are drawn about host species centroids to indicate their location in ordination space and the dispersion in endophyte community composition for each host species except for *Psychotria* for which only two host trees were sampled. All *Macaranga* and *Ficus* host species are labelled.

Figure 3.4

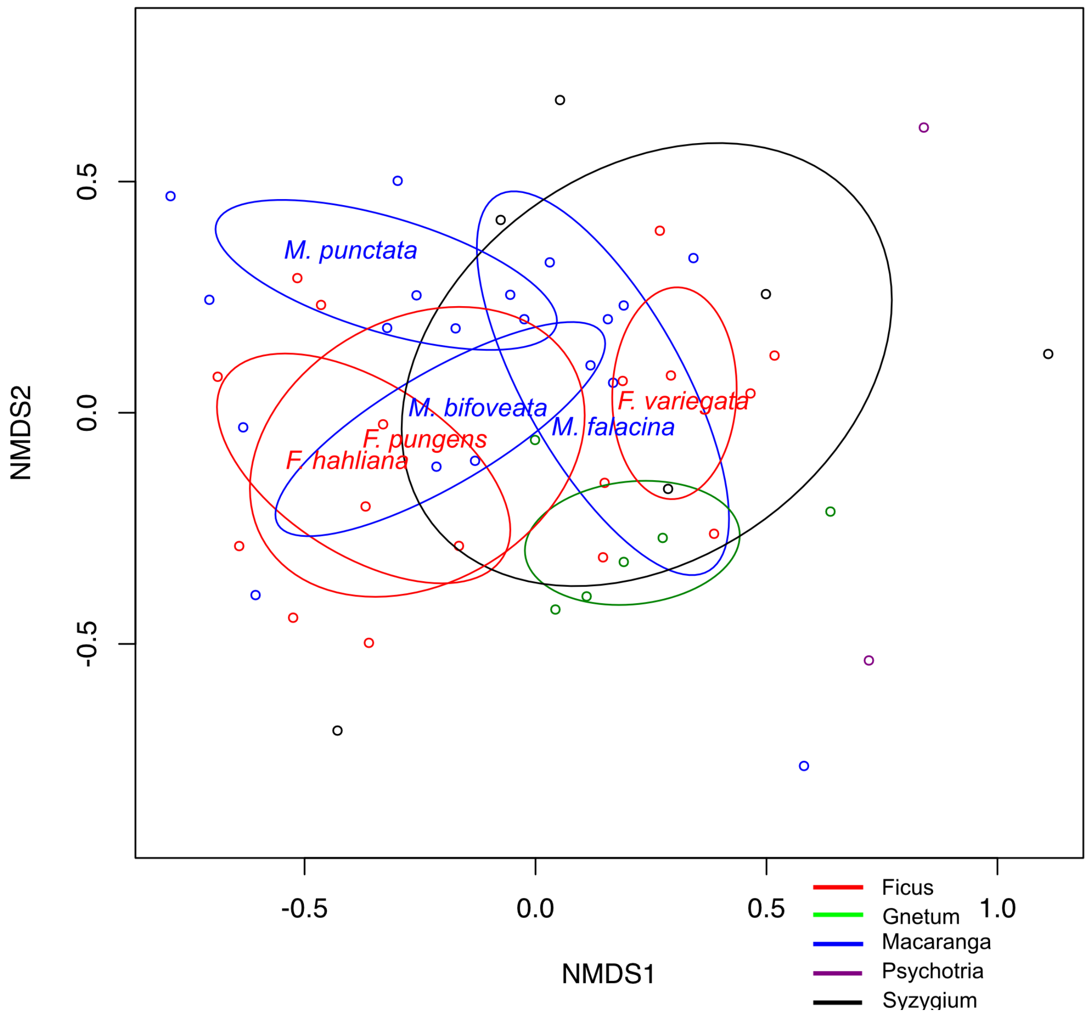

M. punctata
M. bifoveata
M. falacina
F. variegata
F. pungens
F. hahliana
NMDS2
NMDS1
0.5
0.0
-0.5
-0.5
0.0
0.5
1.0
Ficus
Gnetum
Macaranga
Psychotria
Syzygium

Figure 3.5

Bipartite host-endophyte association webs summarize quantitative presence of fungal endophyte MOTUs for three sampling sites (3.5A) and for each sampled plant species within individual sites (3.5B). Quantitative host-endophyte association webs (e.g. Lewis et al. 2002, Novotny et al. 2010), are comprised of an upper row of bars representing abundance of each MOTU and a lower row of bars representing endophyte communities. The width of lines connecting MOTUs and host species are weighted by the abundance of each MOTU per site or host tree species. White bars have been superimposed to mark boundaries of bars corresponding to abundant MOTUs. Rare MOTUs are grouped into bins, indicated by numbers representing abundance of singletons (1), doubletons (2) and tripletons (3).

Figure 3.5

A


3
2
1
Ohu
Wamangu
Wanang

B

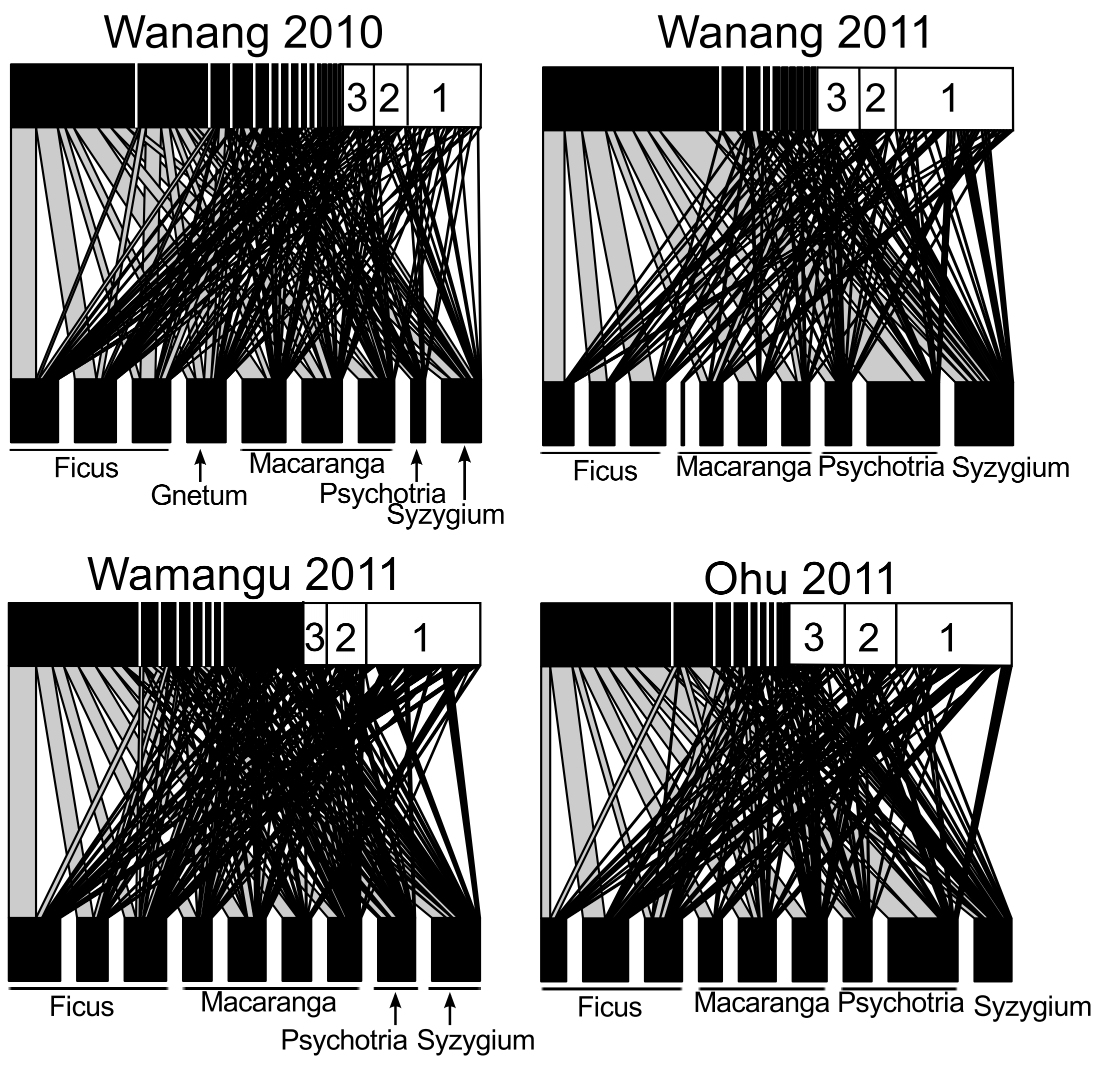
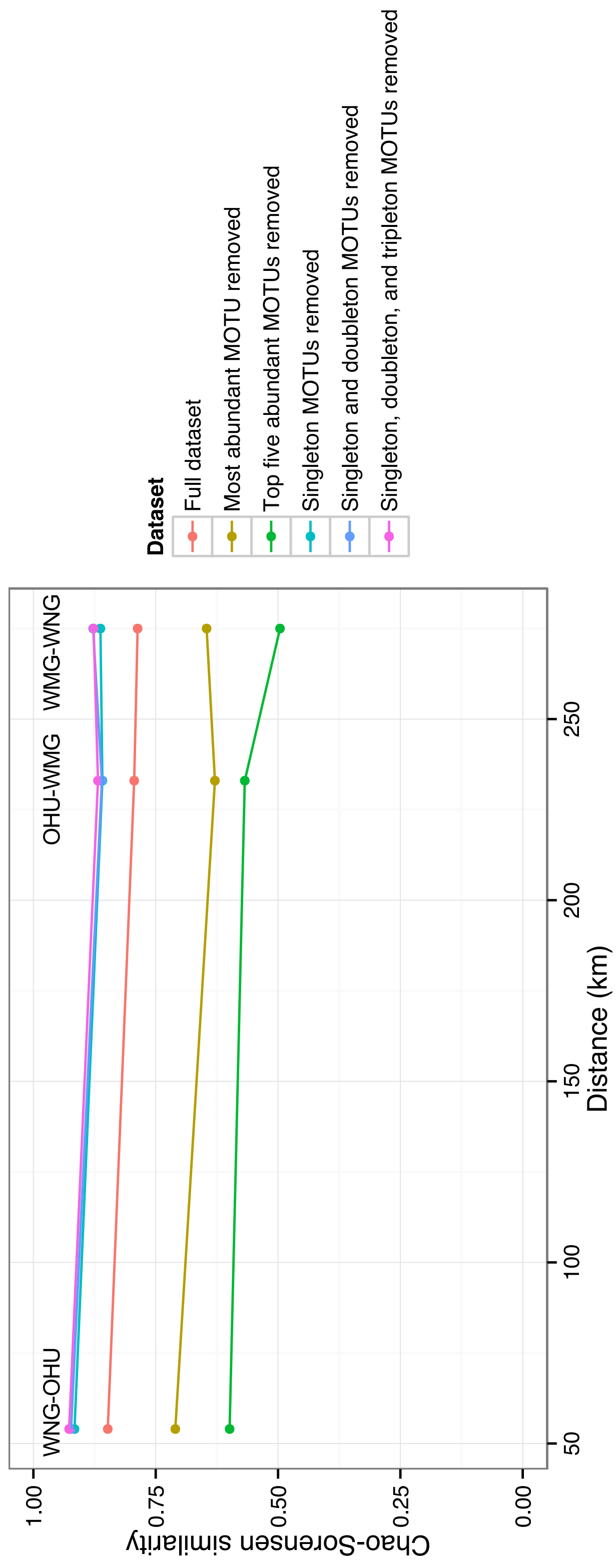

Wanang 2010
3
2
1
Ficus
Gnetum
Macaranga
Psychotria
Syzygium
Wanang 2011
3
2
1
Ficus
Macaranga
Psychotria
Syzygium
Wamangu 2011
3
2
1
Ficus
Macaranga
Psychotria
Syzygium
Ohu 2011
3
2
1
Ficus
Macaranga
Psychotria
Syzygium

Figure 3.6

Pairwise endophyte community Chao-Sorensen similarity values plotted against the distance between sites (km) for Ohu (OHU), Wamangu (WMG) and Wanang (WNG) 2011 collections. Values are shown for community similarity between sites. Values for different datasets are connected by lines for visualization only and no significant correlations of community similarity and spatial distance was found for any dataset (with or without rare MOTUs).

Figure 3.6


Dataset
Full dataset
Most abundant MOTU removed
Top five abundant MOTUs removed
Singleton MOTUs removed
Singleton and doubleton MOTUs removed
Singleton, doubleton, and tripleton MOTUs removed
WNG-OHU
OHU-WMG
WMG-WNG
Chao-Sorensen similarity
1.00
0.75
0.50
0.25
0.00
Distance (km)
50
100
150
200
250

CONCLUSION

The carbon storage estimate from Wanang, the largest and most detailed measurement of a continuous forest in Melanesia, suggests that PNG lowland rainforests contain less biomass per hectare than comparable lowland tropical rainforests on average (Slik et al. 2013). Our findings agree very closely with previous carbon estimates for PNG lowland rainforests reported by Bryan et al. (2010a) and Fox et al. (2010), this concordance suggesting that this figure is more accurate than that of Bryan et al. (2010b). We also found a higher proportion of biomass in small trees than is typically assumed for lowland tropical rainforests (Lugo and Brown 1992, Chave et al. 2003, Fox 2010). This pattern could be due to the elevated disturbance and dynamism of lowland PNG forests, an explanation that has been suggested in the literature (Paijmans 1976, Johns 1986) but remained untested until now. Although the large plot approach used here has great power to reveal spatial and demographic variation in forest carbon storage, this level of sampling is not a realistic general requirement for all future work. Our ability to contrast findings in one large plot to those published from small plot and transect approaches emphasizes the need for randomized site locations and independent verification of carbon estimates.

The findings from investigation of mortality rate and forest age support previous observations (Garwood et al. 1979) and the reputation of New Guinea forests as highly dynamic (Paijmans 1976, Johns 1986, Whitfeld et al. 2014) when compared to other lowland rainforests (Condit et al. 1995, Condit et al. 1999, Shen et al. 2013). The elevated mortality rate (3.95% per annum) and the relatively high incidence of early successional forest patches (6% of total plot area), estimated by reference to an adjacent chronosequence (Whitfeld et al. 2014), provide the first quantitative support for the exceptional dynamism of New Guinea forests.. Basal area in the plot exhibits little or no correspondence to variation in soil nutrients and topography, possibly caused by frequent small-scale disturbances due to unstable terrain (Simonett 1967, Loffler 1977, Garwood et al. 1979). Despite the dynamic nature we describe, New Guinea rainforests appear to have structure in species composition in relation to topography and soil nutrients, on an order similar to that found in other lowland rainforests (Baldeck et al. 2012).

These results serve to further contextualize New Guinea in our global understanding of tropical forests, highlighting these dynamic and productive rainforests as important considerations in global carbon modeling and our understanding of the lowland rainforest biome. Forest dynamics are inextricably linked to carbon storage. Recruitment, growth, and death are essential determinants of carbon flux in forest systems (Doughty et al. 2015). Studying carbon dynamics continues to be of great global interest (Brienen et al. 2015) and essential to understanding carbon cycling in a time of global change. Despite our findings appearing to be robust, it is necessary to acknowledge the limitations of our recensus effort and single plot dataset, albeit very large and detailed. A lack of replication means our results are vulnerable to random variation not indicative of underlying processes. A complete recensus of the Wanang 50 ha plot will lend power to analyses of mortality rate and will shed light on whether patterns observed are the result of consistent background disturbance.

Analyses of occurrence patterns of fungal endophytes suggests that host specificity plays a role in shaping fungal endophyte community composition, although this host affect accounts for a minority of the variation observed. The endophyte community both within sites and in aggregate was comprised of few abundant host generalist and many rare taxa. This observation of a predominant host generalist strategy in fungal endophytes of rainforest trees agrees with observations in tropical grasses (Higgins et al. 2011, Higgins et al. 2014).

Beta diversity, in the sense of turnover between sites (Anderson et al. 2010), of endophyte taxa between sites separated by tens or hundreds of kilometers situated in continuous and abiotically homogenous lowland rainforest, was low. This finding is in contrast to other studies of endophytes that found strong turnover in communities corresponding to strong environmental gradients (Zimmerman and Vitousek 2012, Higgins et al. 2014) and long distances (Arnold et al. 2000, U'Ren et al. 2012) between sampling sites. In contrast, the patterns we observed suggest that in the absence of environmental gradients and host plant community variation, fungal endophyte communities are even across large spatial scales. This pattern of low beta diversity of fungal endophytes in tropical rainforests may also decrease global estimates of fungal species richness (Arnold et al. 2000, Blackwell 2011) if there is concordant low beta diversity in host composition, as host effects have been shown to drive turnover in other fungal taxa (Tedersoo et al. 2014, Prober et al. 2015).

These findings lend support to the concept that host specificity plays a weak but relatively more important role than dispersal limitation in shaping fungal endophyte communities in terms of both local variation and regional turnover. In contrast to these findings in endophytes, recent research on epiphytic fungi showed a strong influence of host identity and foliar traits on the structure of those fungal communities (Kembel and Mueller 2014). Further research is needed to establish why patterns of occurrence in endophytic and epiphytic fungal taxa appear to be distinct. One possible weakness to these finding is the size of our relatively small dataset compared to those possible with a metagenomic approach (Zimmerman and Vitousek 2012, Higgins et al. 2014). There is no reason to believe that metagenomics would change these conclusions, though it is known that culture independent and culture based methods tend to reveal different aspects of fungal communities and introduce unique biases (Tedersoo et al. 2010). Future sampling would ideally couple metagenomic sequencing and culturing to comprehensively sample fungal endophytes of rainforest trees.

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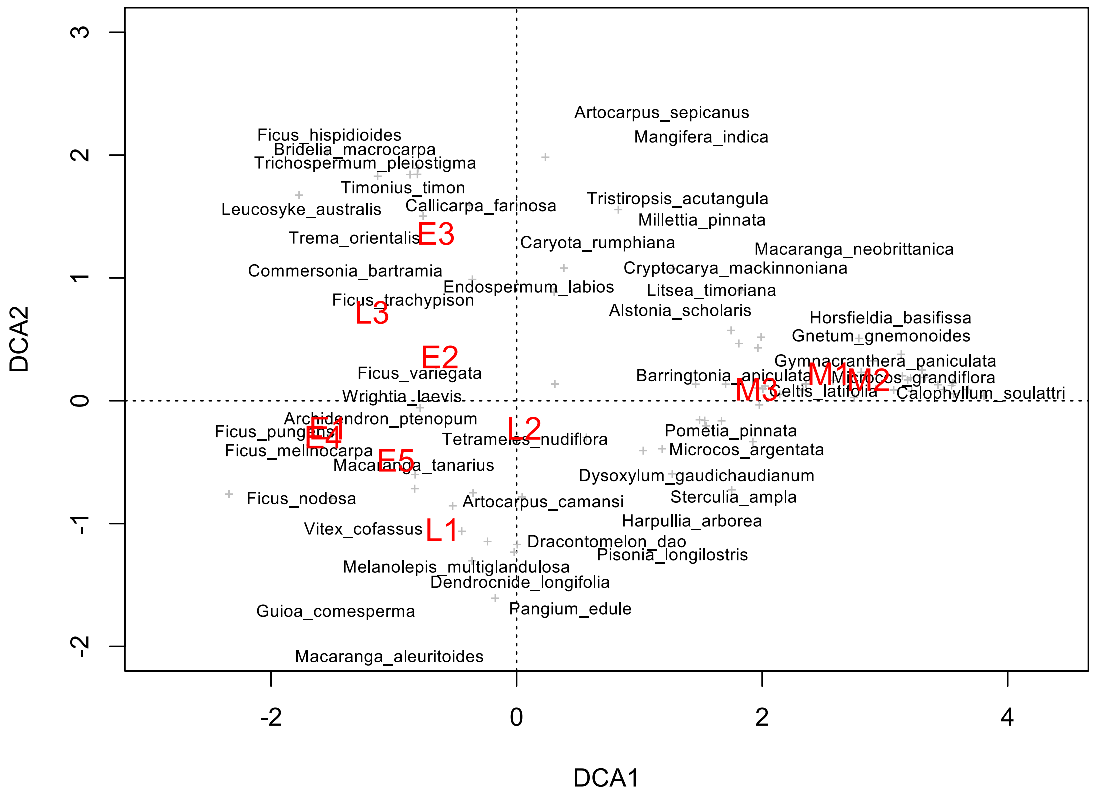
APPENDICES

Appendix 1

Detrended correspondence analysis of chronosequence plot data. Both plots (red) and species (black) are included. Proximity of plots to one another indicates similarity in species composition. Proximity of species to plot labels indicates fidelity to that particular forest type. Plot ages are denoted by the first letter of the corresponding label (M=mature, L=late successional, E=early successional). Species names are plotted such that labels do not overlap, in the case of overlapping species name labels, preference was given to more abundant species.

Appendix 1



DCA1
DCA2
-2
0
2
4
3
2
1
0
-1
-2
Artocarpus_sepicanus
Mangifera_indica
Ficus_hispidioides
Bridelia_macrocarpa
Trichospermum_pleiostigma
Timonius_timon
Leucosyke_australis
Callicarpa_farinosa
Tristiropsis_acutangula
Millettia_pinnata
Trema_orientalis
E3
Caryota_rumphiana
Macaranga_neobrittanica
Commersonia_bartramia
Cryptocarya_mackinnoniana
Endospermum_labios
Litsea_timoriana
Ficus_trachypison
L3
Alstonia_scholaris
Horsfieldia_basifissa
Gnetum_gnemonoides
E2
Gymnacranthera_paniculata
Ficus_variegata
Barringtonia_apiculata
M1
M2
Microcos_grandiflora
M3
Celtis_latifolia
Calophyllum_soulattri
Wrightia_laevis
Archidendron_ptenopum
L2
Ficus_pungens
E4
Pometia_pinnata
Tetrameles_nudiflora
Microcos_argentata
Ficus_melinocarpa
E5
Macaranga_tanarius
Dysoxylum_gaudichaudianum
Ficus_nodosa
Sterculia_ampla
Artocarpus_camansi
Harpullia_arborea
Vitex_cofassus
L1
Dracontomelon_dao
Pisonia_longilostris
Melanolepis_multiglandulosa
Dendrocnide_longifolia
Guioa_comesperma
Pangium_edule
Macaranga_aleuritoides

Appendix 2

Tables of significant indicator species per age class at Wanang. Indicator value statistics and p-values are provided for each species identified as an indicator of an age class. A list truncated at a maximum of ten species per age class was presented in table 2.4.

Appendix 2

3-9 years – early successional

species	stat	p-value
Ficus congesta	0.471	0.002**
Ficus erythrosperma	0.38	0.013*
Ficus rubrivestimenta	0.362	0.028*
Macaranga aleuritoides	0.313	0.016*
Ficus pungens	0.288	0.006**
Ficus variegata	0.283	0.045*
Trichospermum pleiostigma	0.221	0.028*
Elaeocarpus sphaericus	0.206	0.02*
Macaranga quadriglandulosa	0.205	0.043*
Pipturus argenteus	0.185	0.007**
Saurauia purgans	0.184	0.044*
Homolanthus novoguineensis	0.169	0.015*
Alphitonia incana	0.167	0.005**
Clymenia sp.	0.162	0.014*
Duabanga moluccana	0.15	0.014*
Trema orientalis	0.15	0.012*
Planchonia papuana	0.147	0.027*

10-30 years – late successional

species	stat	p-value
Ficus hahliana	0.507	0.006 **
Pometia pinnata	0.495	0.042 *
Ficus adelpha	0.415	0.027 *
Macaranga falacina	0.371	0.038 *
Allophylus cobbe	0.332	0.019 *
Elaeocarpus miegei	0.308	0.011 *
Syzygium furfuraceum	0.305	0.036 *
Dendrocnide longifolia	0.292	0.035 *
Antidesma excavatum	0.243	0.031 *
Celtis 01	0.199	0.041 *
Chisocheton montanus	0.15	0.010 **

31-50 years – younger mature

species	stat	p-value
Litsia timoriana	0.528	0.009 **
Pseudovaria versteegii	0.505	0.003 **
Aglaia rimosa	0.497	0.029 *
Chisocheton ceramicus	0.482	0.040 *
Planchonella xylocarpa	0.439	0.044 *
Aglaia 01	0.437	0.025 *
Celtis philippensis	0.41	0.015 *
Terminalia complanata	0.362	0.047 *
Dendrocnide cordata	0.136	0.040 *

>50 years - mature

species	stat	p-value
Gnetum gnemon	0.593	0.001 ***
Dysoxylum arborescens	0.565	0.001 ***
Celtis latifolia	0.563	0.001 ***
Pimelodendron amboinicum	0.561	0.001 ***
Mastixiodendron pachyclados	0.556	0.001 ***
Gymnacranthera paniculata	0.552	0.001 ***
Harpullia longipetala	0.545	0.001 ***
Versteegia cauliflora	0.541	0.001 ***
Ixora amplexifolia	0.54	0.001 ***
Aglaia lepiorrhachis	0.538	0.001 ***
Dysoxylum macrostachyum	0.524	0.001 ***
Aphanamixis polystachya	0.52	0.022 *
Ternstroemia cherryi	0.507	0.002 **
Randia schumanniana	0.504	0.002 **
Goniothalamus 01	0.491	0.001 ***
Sterculia shillinglawii	0.491	0.001 ***
Calophyllum soulattri	0.48	0.023 *
Dracaena angustifolia	0.472	0.015 *
Haplolobus floribundus	0.461	0.048 *
Myristica globosa	0.461	0.017 *
Ardisia imperialis	0.456	0.003 **
Semecarpus undulatus	0.455	0.009 **
Cryptocarya caloneura	0.449	0.013 *
Cryptocarya mackinnoniana	0.436	0.046 *
Sterculia ampla	0.433	0.018 *
Planchonella myrsinodendron	0.433	0.013 *
Polyalthia glauca	0.395	0.013 *
Actinodaphne nitida	0.384	0.023 *

Intsia bijuga	0.364	0.002 **
Timonius rufescens	0.35	0.028 *
Aganope heptaphylla	0.334	0.015 *
Dysoxylum setosum	0.332	0.015 *
Mallotus peltatus	0.329	0.013 *
Ganophyllum falcatum	0.307	0.039 *
Diospyros foliosa	0.292	0.017 *
Dysoxylum archboldianum	0.276	0.019 *

Appendix 3

Host tree species sampled per site and year for data collections at Ohu, Wamangu, and Wanang in 2010 and 2011 as described in chapter 3. For each host species, the number trees sampled per year is shown, a hyphen means that species was not sampled in that particular collection.

Appendix 3

Species	Wanang 2010	Ohu 2011	Wamangu 2011	Wanang 2011
Ficus hahliana	6	3	3	3
Ficus pungens	6	3	3	2
Ficus variegata	6	3	3	3
Gnetum gnemon	6	-	-	-
Macaranga aleuritoides	-	3	3	2
Macaranga bifoveata	6	3	3	2
Macaranga falacina	6	-	3	3
Macaranga punctata	6	3	3	3
Psychotria leptothrysa	2	3	-	3
Psychotria micrococca	-	3	3	3
Syzygium longipes	6	3	3	3

Appendix 4

Table of information on MOTU (95% similarity), host plant species, UNITE blast results, and associated Genbank accession number for cultured endophyte collected in Papua New Guinea for work presented in chapter 3. The clustering of MOTUs presented here was performed for all sequences, not split by collection year as in the analysis and interpretation of these data presented in chapter 3.

endophyte number	year	site	host species	MOTU	UNITE Species	family	genus	species	pident	genbank accession
2	2010	Wanang	Ficus hahliana	16	SH207303.07FU	Glomerellaceae	unidentified	Glomerellaceae sp	99.59	KR015110
4	2010	Wanang	Ficus hahliana	9	SH198965.07FU	unidentified	unidentified	Ascomycota sp	99.82	KR015693
5	2010	Wanang	Ficus hahliana	34	SH332596.07FU	Nectriaceae	Calonectria	Calonectria canadensis	99.57	KR015935
6	2010	Wanang	Ficus hahliana	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.94	KR016195
7	2010	Wanang	Ficus hahliana	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.79	KR016689
8	2010	Wanang	Ficus hahliana	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	98.86	KR016878
9	2010	Wanang	Ficus hahliana	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.68	KR016956
10	2010	Wanang	Ficus hahliana	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.8	KR014946
11	2010	Wanang	Ficus hahliana	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	98.62	KR014966
13	2010	Wanang	Ficus hahliana	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.8	KR014984
15	2010	Wanang	Ficus hahliana	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.93	KR014995
16	2010	Wanang	Ficus hahliana	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.25	KR015064
18	2010	Wanang	Ficus pungens	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.88	KR015091
19	2010	Wanang	Ficus pungens	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.95	KR015100
20	2010	Wanang	Ficus pungens	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.79	KR015111
22	2010	Wanang	Ficus pungens	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.87	KR015159
23	2010	Wanang	Ficus pungens	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.98	KR015212
24	2010	Wanang	Ficus pungens	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	98.28	KR015240
25	2010	Wanang	Ficus pungens	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.94	KR015285
31	2010	Wanang	Ficus pungens	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.84	KR015372
33	2010	Wanang	Ficus pungens	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.94	KR015429
34	2010	Wanang	Ficus pungens	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.73	KR015464
36	2010	Wanang	Ficus pungens	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	98.93	KR015528
39	2010	Wanang	Ficus pungens	5	SH190215.07FU	Trichocomaceae	Penicillium	Penicillium citrinum	100	KR015663
40	2010	Wanang	Ficus pungens	28	SH208529.07FU	Trichocomaceae	Penicillium	Penicillium parvulum	100	KR015694
41	2010	Wanang	Ficus pungens	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.93	KR015723
43	2010	Wanang	Ficus pungens	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.82	KR015763
45	2010	Wanang	Ficus pungens	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.86	KR015804
47	2010	Wanang	Ficus pungens	16	SH207303.07FU	Glomerellaceae	unidentified	Glomerellaceae sp	99.6	KR015855
49	2010	Wanang	Ficus pungens	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.59	KR015893
50	2010	Wanang	Ficus pungens	25	SH207596.07FU	Trichocomaceae	Aspergillus	Aspergillus sclerotiorum	99.57	KR015936

endophyte number	year	site	host species	MOTU	UNITE Species	family	genus	species	pident	genbank accession
52	2010	Wanang	Macaranga bifoveata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.85	KR015981
53	2010	Wanang	Macaranga bifoveata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.59	KR015995
54	2010	Wanang	Macaranga bifoveata	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016008
55	2010	Wanang	Macaranga bifoveata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.79	KR016016
56	2010	Wanang	Macaranga bifoveata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.66	KR016038
57	2010	Wanang	Macaranga bifoveata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.54	KR016065
58	2010	Wanang	Macaranga bifoveata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.46	KR016098
59	2010	Wanang	Macaranga bifoveata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.71	KR016146
60	2010	Wanang	Macaranga bifoveata	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016196
62	2010	Wanang	Macaranga bifoveata	47	SH193594.07FU	Xylariaceae	Rosellinia	Rosellinia bunodes	92.04	KR016314
64	2010	Wanang	Macaranga bifoveata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.81	KR016418
65	2010	Wanang	Macaranga bifoveata	16	SH207303.07FU	Glomerellaceae	unidentified	Glomerellaceae sp	99.6	KR016456
67	2010	Wanang	Macaranga bifoveata	5	SH190215.07FU	Trichocomaceae	Penicillium	Penicillium citrinum	100	KR016552
69	2010	Wanang	Macaranga fallacina	25	SH280314.07FU	Trichocomaceae	Aspergillus	Aspergillus steynii	100	KR016636
71	2010	Wanang	Syzygium longipes	8	SH375666.07FU	Glomerellaceae	Colletotrichum	Colletotrichum tropicicola	99.35	KR016744
75	2010	Wanang	Macaranga punctata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.81	KR016839
79	2010	Wanang	Macaranga fallacina	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.78	KR016868
80	2010	Wanang	Macaranga fallacina	8	SH261145.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nupharicola	99.18	KR016879
81	2010	Wanang	Macaranga punctata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.52	KR016888
82	2010	Wanang	Macaranga punctata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.75	KR016896
84	2010	Wanang	Macaranga punctata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.82	KR016914
87	2010	Wanang	Syzygium longipes	12	SH200163.07FU	Hyponectriaceae	Beltraniella	Beltraniella sp	96.74	KR016934
88	2010	Wanang	Macaranga punctata	23	SH195774.07FU	Dothioraceae	Aureobasidium	Aureobasidium pullulans	98.7	KR016942
92	2010	Wanang	Syzygium longipes	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.8	KR016971
94	2010	Wanang	Macaranga punctata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.89	KR016983
95	2010	Wanang	Macaranga punctata	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	98.46	KR016991
96	2010	Wanang	Macaranga punctata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.65	KR016998
98	2010	Wanang	Syzygium longipes	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.79	KR017004
99	2010	Wanang	Syzygium longipes	12	SH200163.07FU	Hyponectriaceae	Beltraniella	Beltraniella sp	96.55	KR017011
99	2010	Wanang	Syzygium longipes	12	SH200163.07FU	Hyponectriaceae	Beltraniella	Beltraniella sp	98.44	KR017011
100	2010	Wanang	Macaranga punctata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.83	KR014947

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101	2010	Wanang	Macaranga punctata	44	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	91.55	KR014954
107	2010	Wanang	Macaranga bifoveata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.86	KR014958
108	2010	Wanang	Macaranga bifoveata	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.79	KR014965
110	2010	Wanang	Macaranga bifoveata	24	SH194547.07FU	Incertae_sedis	Candida	Candida albicans	99.78	KR014967
111	2010	Wanang	Macaranga fallacina	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	98.07	KR014968
113	2010	Wanang	Syzygium longipes	7	SH195657.07FU	Glomerellaceae	unidentified	Glomerellaceae sp	98.89	KR014971
115	2010	Wanang	Syzygium longipes	4	SH195663.07FU	Glomerellaceae	Colletotrichum	Colletotrichum sp IP 43	99.19	KR014974
118	2010	Wanang	Macaranga punctata	8	SH261145.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nupharicola	99.38	KR014979
120	2010	Wanang	Macaranga punctata	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR014980
122	2010	Wanang	Syzygium longipes	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.76	KR014981
124	2010	Wanang	Macaranga punctata	8	SH195649.07FU	Glomerellaceae	Colletotrichum	Colletotrichum xanthorrhoeae	98.52	KR014982
127	2010	Wanang	Macaranga punctata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.7	KR014983
131	2010	Wanang	Syzygium longipes	34	SH332601.07FU	Nectriaceae	Calonectria	Calonectria pacifica	99.57	KR014985
134	2010	Wanang	Syzygium longipes	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.76	KR014986
135	2010	Wanang	Ficus hahliana	18	SH195462.07FU	Botryosphaeriaceae	Endomelanconiopsis	Endomelanconiopsis endophytica	99.8	KR014987
136	2010	Wanang	Ficus hahliana	8	SH261145.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nupharicola	99.38	KR014988
137	2010	Wanang	Ficus hahliana	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.7	KR014989
138	2010	Wanang	Ficus hahliana	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	98.86	KR014990
140	2010	Wanang	Ficus pungens	18	SH195462.07FU	Botryosphaeriaceae	Endomelanconiopsis	Endomelanconiopsis endophytica	100	KR014991
147	2010	Wanang	Ficus hahliana	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.8	KR014992
151	2010	Wanang	Macaranga fallacina	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.91	KR015003
152	2010	Wanang	Macaranga fallacina	16	SH207303.07FU	Glomerellaceae	unidentified	Glomerellaceae sp	99.59	KR015010
153	2010	Wanang	Macaranga punctata	4	SH195663.07FU	Glomerellaceae	Colletotrichum	Colletotrichum sp IP 43	99.18	KR015019
155	2010	Wanang	Macaranga fallacina	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.9	KR015031
156	2010	Wanang	Macaranga fallacina	8	SH195649.07FU	Glomerellaceae	Colletotrichum	Colletotrichum xanthorrhoeae	98.6	KR015039
159	2010	Wanang	Macaranga fallacina	33	SH177701.07FU	Hypocreaceae	unidentified	Hypocreaceae sp	99.26	KR015056
161	2010	Wanang	Macaranga fallacina	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.95	KR015068
162	2010	Wanang	Macaranga fallacina	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.79	KR015071
164	2010	Wanang	Macaranga bifoveata	17	SH193088.07FU	Incertae_sedis	Geosmithia	Geosmithia sp 2 FR 2014	98.03	KR015075
165	2010	Wanang	Macaranga bifoveata	8	SH375666.07FU	Glomerellaceae	Colletotrichum	Colletotrichum tropicicola	98.76	KR015077
167	2010	Wanang	Macaranga bifoveata	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.06	KR015078

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168	2010	Wanang	Macaranga bifoveata	8	SH261145.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nupharicola	99.38	KR015079
169	2010	Wanang	Macaranga bifoveata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.67	KR015080
173	2010	Wanang	Macaranga bifoveata	8	SH261145.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nupharicola	99.75	KR015081
176	2010	Wanang	Ficus pungens	8	SH375666.07FU	Glomerellaceae	Colletotrichum	Colletotrichum tropicicola	99.18	KR015082
177	2010	Wanang	Macaranga bifoveata	29	SH012312.07FU	Hymenochaetaceae	Phellinus	Phellinus noxius	98.63	KR015083
178	2010	Wanang	Ficus pungens	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.84	KR015086
179	2010	Wanang	Ficus pungens	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	98.26	KR015088
180	2010	Wanang	Ficus hahliana	29	SH192878.07FU	Hymenochaetaceae	Phellinus	Phellinus noxius	98.7	KR015092
181	2010	Wanang	Ficus hahliana	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.68	KR015093
182	2010	Wanang	Macaranga fallacina	8	SH261145.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nupharicola	99.38	KR015094
183	2010	Wanang	Macaranga fallacina	8	SH375666.07FU	Glomerellaceae	Colletotrichum	Colletotrichum tropicicola	99.18	KR015095
184	2010	Wanang	Macaranga fallacina	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.6	KR015096
185	2010	Wanang	Macaranga fallacina	8	SH375666.07FU	Glomerellaceae	Colletotrichum	Colletotrichum tropicicola	99.18	KR015097
187	2010	Wanang	Macaranga fallacina	8	SH195649.07FU	Glomerellaceae	Colletotrichum	Colletotrichum xanthorrhoeae	98.6	KR015098
188	2010	Wanang	Macaranga fallacina	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.46	KR015099
190	2010	Wanang	Macaranga fallacina	45	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	89.58	KR015101
191	2010	Wanang	Macaranga fallacina	8	SH195649.07FU	Glomerellaceae	Colletotrichum	Colletotrichum xanthorrhoeae	98.6	KR015102
192	2010	Wanang	Macaranga fallacina	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.74	KR015103
193	2010	Wanang	Macaranga fallacina	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	98.13	KR015104
194	2010	Wanang	Macaranga fallacina	7	SH195657.07FU	Glomerellaceae	unidentified	Glomerellaceae sp	98.89	KR015105
196	2010	Wanang	Macaranga punctata	8	SH375666.07FU	Glomerellaceae	Colletotrichum	Colletotrichum tropicicola	98.97	KR015106
197	2010	Wanang	Macaranga punctata	52	SH187530.07FU	unidentified	unidentified	Polyporales sp	98.48	KR015107
198	2010	Wanang	Macaranga punctata	4	SH195663.07FU	Glomerellaceae	Colletotrichum	Colletotrichum sp IP 43	98.36	KR015108
199	2010	Wanang	Macaranga punctata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	98.45	KR015109
200	2010	Wanang	Syzygium longipes	13	SH198541.07FU	unidentified	unidentified	Polyporales sp	99.47	KR015112
201	2010	Wanang	Syzygium longipes	8	SH261145.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nupharicola	99.38	KR015113
202	2010	Wanang	Syzygium longipes	8	SH195649.07FU	Glomerellaceae	Colletotrichum	Colletotrichum xanthorrhoeae	98.59	KR015114
203	2010	Wanang	Syzygium longipes	7	SH195657.07FU	Glomerellaceae	unidentified	Glomerellaceae sp	99.78	KR015115
204	2010	Wanang	Syzygium longipes	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.64	KR015116
205	2010	Wanang	Syzygium longipes	8	SH195649.07FU	Glomerellaceae	Colletotrichum	Colletotrichum xanthorrhoeae	98.2	KR015117
206	2010	Wanang	Macaranga bifoveata	13	SH198541.07FU	unidentified	unidentified	Polyporales sp	99.29	KR015118

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207	2010	Wanang	Macaranga bifoveata	16	SH207303.07FU	Glomerellaceae	unidentified	Glomerellaceae sp	100	KR015119
208	2010	Wanang	Macaranga punctata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.56	KR015120
209	2010	Wanang	Syzygium longipes	8	SH261145.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nupharicola	99.38	KR015121
210	2010	Wanang	Ficus pungens	41	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	88.65	KR015122
212	2010	Wanang	Macaranga bifoveata	8	SH195649.07FU	Glomerellaceae	Colletotrichum	Colletotrichum xanthorrhoeae	98.6	KR015126
213	2010	Wanang	Macaranga bifoveata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.84	KR015134
214	2010	Wanang	Macaranga bifoveata	8	SH195649.07FU	Glomerellaceae	Colletotrichum	Colletotrichum xanthorrhoeae	98.6	KR015136
215	2010	Wanang	Macaranga bifoveata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.73	KR015138
216	2010	Wanang	Macaranga bifoveata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.72	KR015145
217	2010	Wanang	Ficus pungens	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.86	KR015150
218	2010	Wanang	Ficus pungens	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.94	KR015152
219	2010	Wanang	Ficus pungens	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	98.52	KR015154
220	2010	Wanang	Macaranga punctata	8	SH375666.07FU	Glomerellaceae	Colletotrichum	Colletotrichum tropicicola	99.18	KR015160
221	2010	Wanang	Macaranga bifoveata	21	SH185544.07FU	Diaporthaceae	Diaporthe	Diaporthe sp A21	98.2	KR015163
222	2010	Wanang	Syzygium longipes	12	SH209689.07FU	unidentified	unidentified	Fungi sp	85.76	KR015168
223	2010	Wanang	Syzygium longipes	12	SH200163.07FU	Hyponectriaceae	Beltraniella	Beltraniella sp	96.32	KR015175
223	2010	Wanang	Syzygium longipes	12	SH200163.07FU	Hyponectriaceae	Beltraniella	Beltraniella sp	98.48	KR015175
224	2010	Wanang	Macaranga punctata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.8	KR015183
225	2010	Wanang	Ficus pungens	19	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	95.14	KR015187
228	2010	Wanang	Ficus hahliana	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.93	KR015201
233	2010	Wanang	Syzygium longipes	4	SH195663.07FU	Glomerellaceae	Colletotrichum	Colletotrichum sp IP 43	98.95	KR015219
234	2010	Wanang	Syzygium longipes	4	SH195663.07FU	Glomerellaceae	Colletotrichum	Colletotrichum sp IP 43	99.39	KR015223
235	2010	Wanang	Ficus hahliana	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.88	KR015227
238	2010	Wanang	Ficus hahliana	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.69	KR015235
239	2010	Wanang	Ficus hahliana	13	SH198541.07FU	unidentified	unidentified	Polyporales sp	100	KR015237
240	2010	Wanang	Ficus pungens	12	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	83.87	KR015241
242	2010	Wanang	Ficus hahliana	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.59	KR015246
243	2010	Wanang	Ficus hahliana	8	SH375666.07FU	Glomerellaceae	Colletotrichum	Colletotrichum tropicicola	98.96	KR015249
244	2010	Wanang	Ficus hahliana	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.72	KR015257
247	2010	Wanang	Ficus hahliana	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.96	KR015267
248	2010	Wanang	Ficus hahliana	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.87	KR015274

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249	2010	Wanang	Ficus hahliana	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.83	KR015281
250	2010	Wanang	Syzygium longipes	12	SH200163.07FU	Hyponectriaceae	Beltraniella	Beltraniella sp	98.48	KR015286
250	2010	Wanang	Syzygium longipes	12	SH200163.07FU	Hyponectriaceae	Beltraniella	Beltraniella sp	96.55	KR015286
251	2010	Wanang	Macaranga fallacina	9	SH198965.07FU	unidentified	unidentified	Ascomycota sp	100	KR015292
252	2010	Wanang	Macaranga fallacina	31	SH188258.07FU	unidentified	unidentified	Agaricomycetes sp	99.62	KR015297
253	2010	Wanang	Macaranga fallacina	8	SH261145.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nupharicola	99.38	KR015301
254	2010	Wanang	Macaranga fallacina	9	SH198965.07FU	unidentified	unidentified	Ascomycota sp	100	KR015305
257	2010	Wanang	Macaranga punctata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.68	KR015311
258	2010	Wanang	Macaranga punctata	8	SH375666.07FU	Glomerellaceae	Colletotrichum	Colletotrichum tropicicola	99.18	KR015312
259	2010	Wanang	Macaranga punctata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.78	KR015314
260	2010	Wanang	Macaranga fallacina	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.94	KR015315
262	2010	Wanang	Macaranga fallacina	1	SH279827.07FU	Glomerellaceae	Colletotrichum	Colletotrichum citri	99.76	KR015316
263	2010	Wanang	Macaranga fallacina	8	SH375666.07FU	Glomerellaceae	Colletotrichum	Colletotrichum tropicicola	99.18	KR015317
266	2010	Wanang	Ficus pungens	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.85	KR015319
267	2010	Wanang	Ficus variegata	16	SH207303.07FU	Glomerellaceae	unidentified	Glomerellaceae sp	99.51	KR015320
269	2010	Wanang	Ficus variegata	8	SH375666.07FU	Glomerellaceae	Colletotrichum	Colletotrichum tropicicola	98.97	KR015325
270	2010	Wanang	Ficus variegata	8	SH195649.07FU	Glomerellaceae	Colletotrichum	Colletotrichum xanthorrhoeae	98.4	KR015326
273	2010	Wanang	Macaranga fallacina	35	SH017305.07FU	unidentified	unidentified	Xylariales sp	96.88	KR015331
274	2010	Wanang	Ficus variegata	9	SH198965.07FU	unidentified	unidentified	Ascomycota sp	100	KR015332
275	2010	Wanang	Ficus variegata	13	SH198541.07FU	unidentified	unidentified	Polyporales sp	99.47	KR015333
276	2010	Wanang	Macaranga punctata	8	SH375666.07FU	Glomerellaceae	Colletotrichum	Colletotrichum tropicicola	99.18	KR015337
277	2010	Wanang	Syzygium longipes	8	SH261145.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nupharicola	99.18	KR015338
278	2010	Wanang	Syzygium longipes	8	SH261145.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nupharicola	99.11	KR015339
279	2010	Wanang	Psychotria leptothyrsa	57	SH216142.07FU	Magnaporthaceae	Mycoleptodiscus	Mycoleptodiscus sp	100	KR015341
283	2010	Wanang	Ficus variegata	8	SH195649.07FU	Glomerellaceae	Colletotrichum	Colletotrichum xanthorrhoeae	98.4	KR015342
284	2010	Wanang	Ficus hahliana	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.56	KR015346
285	2010	Wanang	Macaranga fallacina	35	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	89.45	KR015348
286	2010	Wanang	Macaranga fallacina	9	SH198965.07FU	unidentified	unidentified	Ascomycota sp	100	KR015350
287	2010	Wanang	Macaranga fallacina	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.8	KR015351
289	2010	Wanang	Macaranga fallacina	9	SH198965.07FU	unidentified	unidentified	Ascomycota sp	100	KR015352
290	2010	Wanang	Macaranga fallacina	9	SH198965.07FU	unidentified	unidentified	Ascomycota sp	100	KR015353

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291	2010	Wanang	Psychotria leptothyrsa	9	SH198965.07FU	unidentified	unidentified	Ascomycota sp	100	KR015354
292	2010	Wanang	Psychotria leptothyrsa	8	SH375666.07FU	Glomerellaceae	Colletotrichum	Colletotrichum tropicicola	98.97	KR015355
294	2010	Wanang	Syzygium longipes	8	SH195649.07FU	Glomerellaceae	Colletotrichum	Colletotrichum xanthorrhoeae	98.4	KR015357
295	2010	Wanang	Syzygium longipes	8	SH261145.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nupharicola	99.18	KR015358
296	2010	Wanang	Syzygium longipes	8	SH261145.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nupharicola	99.38	KR015359
297	2010	Wanang	Ficus pungens	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.84	KR015362
300	2010	Wanang	Ficus variegata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.84	KR015364
301	2010	Wanang	Ficus variegata	16	SH207303.07FU	Glomerellaceae	unidentified	Glomerellaceae sp	99.54	KR015366
302	2010	Wanang	Ficus variegata	21	SH200978.07FU	Diaporthaceae	unidentified	Diaporthaceae sp	99.19	KR015368
303	2010	Wanang	Ficus variegata	9	SH198965.07FU	unidentified	unidentified	Ascomycota sp	99.64	KR015369
304	2010	Wanang	Macaranga bifoveata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.82	KR015370
308	2010	Wanang	Ficus variegata	60	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	85.7	KR015371
312	2010	Wanang	Macaranga bifoveata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.88	KR015375
314	2010	Wanang	Ficus hahliana	7	SH195652.07FU	Glomerellaceae	unidentified	Glomerellaceae sp	100	KR015378
315	2010	Wanang	Ficus hahliana	8	SH261145.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nupharicola	99.77	KR015382
316	2010	Wanang	Macaranga bifoveata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.67	KR015385
317	2010	Wanang	Syzygium longipes	8	SH195649.07FU	Glomerellaceae	Colletotrichum	Colletotrichum xanthorrhoeae	98.6	KR015390
318	2010	Wanang	Syzygium longipes	8	SH195649.07FU	Glomerellaceae	Colletotrichum	Colletotrichum xanthorrhoeae	98.4	KR015396
319	2010	Wanang	Syzygium longipes	8	SH261145.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nupharicola	99.51	KR015402
321	2010	Wanang	Syzygium longipes	8	SH261145.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nupharicola	99.54	KR015406
323	2010	Wanang	Macaranga fallacina	9	SH198965.07FU	unidentified	unidentified	Ascomycota sp	99.82	KR015410
324	2010	Wanang	Ficus variegata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	98.01	KR015415
325	2010	Wanang	Ficus variegata	8	SH375666.07FU	Glomerellaceae	Colletotrichum	Colletotrichum tropicicola	98.76	KR015421
326	2010	Wanang	Ficus variegata	8	SH261145.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nupharicola	99.38	KR015422
327	2010	Wanang	Ficus variegata	9	SH198965.07FU	unidentified	unidentified	Ascomycota sp	99.64	KR015424
328	2010	Wanang	Macaranga bifoveata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.93	KR015426
329	2010	Wanang	Macaranga bifoveata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.73	KR015427
330	2010	Wanang	Ficus hahliana	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.18	KR015430
331	2010	Wanang	Ficus variegata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.79	KR015436
334	2010	Wanang	Ficus variegata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.93	KR015442
335	2010	Wanang	Ficus variegata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.93	KR015447

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336	2010	Wanang	Ficus hahliana	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.94	KR015451
339	2010	Wanang	Ficus variegata	8	SH261145.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nupharicola	99.38	KR015462
340	2010	Wanang	Ficus variegata	8	SH375666.07FU	Glomerellaceae	Colletotrichum	Colletotrichum tropicicola	99.17	KR015465
341	2010	Wanang	Ficus variegata	8	SH261145.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nupharicola	99.18	KR015472
342	2010	Wanang	Ficus variegata	8	SH375666.07FU	Glomerellaceae	Colletotrichum	Colletotrichum tropicicola	98.96	KR015478
344	2010	Wanang	Ficus variegata	8	SH261145.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nupharicola	99.18	KR015480
347	2010	Wanang	Ficus pungens	8	SH195649.07FU	Glomerellaceae	Colletotrichum	Colletotrichum xanthorrhoeae	98.4	KR015482
352	2010	Wanang	Ficus pungens	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.97	KR015496
356	2010	Wanang	Macaranga punctata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.85	KR015507
359	2010	Wanang	Syzygium longipes	12	SH207791.07FU	unidentified	unidentified	Xylariales sp	91.94	KR015519
359	2010	Wanang	Syzygium longipes	12	SH207791.07FU	unidentified	unidentified	Xylariales sp	97.93	KR015519
360	2010	Wanang	Ficus hahliana	29	SH192878.07FU	Hymenochaetaceae	Phellinus	Phellinus noxius	98.19	KR015529
361	2010	Wanang	Ficus hahliana	56	SH211304.07FU	Halosphaeriaceae	unidentified	Halosphaeriaceae sp	97.31	KR015534
363	2010	Wanang	Psychotria leptothyrsa	5	SH190215.07FU	Trichocomaceae	Penicillium	Penicillium citrinum	100	KR015545
367	2010	Wanang	Psychotria leptothyrsa	3	SH212802.07FU	unidentified	unidentified	Sordariomycetes sp	100	KR015553
368	2010	Wanang	Psychotria leptothyrsa	55	SH209689.07FU	unidentified	unidentified	Fungi sp	91.14	KR015562
369	2010	Wanang	Psychotria leptothyrsa	5	SH190215.07FU	Trichocomaceae	Penicillium	Penicillium citrinum	100	KR015571
373	2010	Wanang	Psychotria leptothyrsa	4	SH195663.07FU	Glomerellaceae	Colletotrichum	Colletotrichum sp IP 43	98.79	KR015597
374	2010	Wanang	Ficus hahliana	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.72	KR015602
376	2010	Wanang	Ficus hahliana	7	SH195652.07FU	Glomerellaceae	unidentified	Glomerellaceae sp	99.76	KR015612
383	2010	Wanang	Syzygium longipes	13	SH198541.07FU	unidentified	unidentified	Polyporales sp	99.82	KR015640
387	2010	Wanang	Ficus hahliana	5	SH190215.07FU	Trichocomaceae	Penicillium	Penicillium citrinum	100	KR015648
390	2010	Wanang	Ficus hahliana	13	SH198541.07FU	unidentified	unidentified	Polyporales sp	99.46	KR015664
395	2010	Wanang	Ficus hahliana	5	SH190215.07FU	Trichocomaceae	Penicillium	Penicillium citrinum	100	KR015678
397	2010	Wanang	Ficus hahliana	48	SH187150.07FU	Xylariaceae	Hypoxylon	Hypoxylon sp LC06	97.83	KR015688
400	2010	Wanang	Ficus hahliana	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.92	KR015695
404	2010	Wanang	Ficus hahliana	17	SH193088.07FU	Incertae_sedis	Geosmithia	Geosmithia sp 2 FR 2014	97.88	KR015718
409	2010	Wanang	Macaranga bifoveata	62	SH186265.07FU	Trichocomaceae	Aspergillus	Aspergillus subversicolor	97.56	KR015722
417	2010	Wanang	Macaranga bifoveata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.44	KR015733
418	2010	Wanang	Macaranga bifoveata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.81	KR015738
424	2010	Wanang	Macaranga bifoveata	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR015744

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425	2010	Wanang	Ficus hahliana	5	SH190215.07FU	Trichocomaceae	Penicillium	Penicillium citrinum	100	KR015746
430	2010	Wanang	Ficus hahliana	5	SH190215.07FU	Trichocomaceae	Penicillium	Penicillium citrinum	100	KR015764
435	2010	Wanang	Ficus hahliana	17	SH193088.07FU	Incertae_sedis	Geosmithia	Geosmithia sp 2 FR 2014	97.88	KR015772
437	2010	Wanang	Ficus hahliana	5	SH190215.07FU	Trichocomaceae	Penicillium	Penicillium citrinum	100	KR015778
438	2010	Wanang	Ficus hahliana	5	SH190215.07FU	Trichocomaceae	Penicillium	Penicillium citrinum	100	KR015780
443	2010	Wanang	Ficus hahliana	5	SH190215.07FU	Trichocomaceae	Penicillium	Penicillium citrinum	99.78	KR015789
450	2010	Wanang	Ficus hahliana	25	SH207596.07FU	Trichocomaceae	Aspergillus	Aspergillus sclerotiorum	98.39	KR015805
453	2010	Wanang	Ficus hahliana	5	SH190215.07FU	Trichocomaceae	Penicillium	Penicillium citrinum	100	KR015812
457	2010	Wanang	Syzygium longipes	5	SH190215.07FU	Trichocomaceae	Penicillium	Penicillium citrinum	100	KR015821
459	2010	Wanang	Ficus variegata	5	SH190215.07FU	Trichocomaceae	Penicillium	Penicillium citrinum	100	KR015830
460	2010	Wanang	Ficus variegata	5	SH190215.07FU	Trichocomaceae	Penicillium	Penicillium citrinum	100	KR015831
461	2010	Wanang	Psychotria leptothyrsa	8	SH195649.07FU	Glomerellaceae	Colletotrichum	Colletotrichum xanthorrhoeae	98	KR015833
462	2010	Wanang	Macaranga bifoveata	5	SH190215.07FU	Trichocomaceae	Penicillium	Penicillium citrinum	100	KR015835
465	2010	Wanang	Macaranga fallacina	9	SH198965.07FU	unidentified	unidentified	Ascomycota sp	99.46	KR015840
466	2010	Wanang	Macaranga fallacina	5	SH190215.07FU	Trichocomaceae	Penicillium	Penicillium citrinum	100	KR015844
468	2010	Wanang	Ficus pungens	5	SH190215.07FU	Trichocomaceae	Penicillium	Penicillium citrinum	100	KR015850
471	2010	Wanang	Ficus pungens	5	SH190215.07FU	Trichocomaceae	Penicillium	Penicillium citrinum	100	KR015857
474	2010	Wanang	Macaranga bifoveata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.74	KR015862
475	2010	Wanang	Ficus variegata	8	SH375666.07FU	Glomerellaceae	Colletotrichum	Colletotrichum tropicicola	98.35	KR015863
477	2010	Wanang	Ficus pungens	37	SH190216.07FU	Trichocomaceae	Penicillium	Penicillium steckii	100	KR015865
479	2010	Wanang	Ficus variegata	8	SH261145.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nupharicola	99.34	KR015868
481	2010	Wanang	Ficus variegata	8	SH195649.07FU	Glomerellaceae	Colletotrichum	Colletotrichum xanthorrhoeae	98.6	KR015871
482	2010	Wanang	Ficus variegata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.57	KR015874
483	2010	Wanang	Ficus variegata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.79	KR015876
487	2010	Wanang	Macaranga bifoveata	5	SH190215.07FU	Trichocomaceae	Penicillium	Penicillium citrinum	100	KR015886
491	2010	Wanang	Ficus pungens	37	SH190216.07FU	Trichocomaceae	Penicillium	Penicillium steckii	100	KR015895
492	2010	Wanang	Macaranga fallacina	30	SH008783.07FU	Hymenochaetaceae	Inonotus	Inonotus pachyphloeus	100	KR015902
494	2010	Wanang	Syzygium longipes	10	SH216453.07FU	Wallemiaceae	Wallemia	Wallemia sebi	100	KR015911
495	2010	Wanang	Syzygium longipes	61	SH012035.07FU	unidentified	unidentified	uncultured fungus	92.23	KR015916
496	2010	Wanang	Syzygium longipes	57	SH216142.07FU	Magnaporthaceae	Mycoleptodiscus	Mycoleptodiscus sp	100	KR015923
498	2010	Wanang	Ficus pungens	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.79	KR015930

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499	2010	Wanang	Macaranga fallacina	8	SH375666.07FU	Glomerellaceae	Colletotrichum	Colletotrichum tropicicola	98.97	KR015932
500	2010	Wanang	Ficus pungens	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.68	KR015937
501	2010	Wanang	Ficus hahliana	8	SH375666.07FU	Glomerellaceae	Colletotrichum	Colletotrichum tropicicola	99.18	KR015940
502	2010	Wanang	Macaranga bifoveata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.6	KR015941
507	2010	Wanang	Macaranga bifoveata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.22	KR015950
512	2010	Wanang	Macaranga punctata	16	SH207303.07FU	Glomerellaceae	unidentified	Glomerellaceae sp	99.6	KR015960
513	2010	Wanang	Ficus pungens	13	SH198541.07FU	unidentified	unidentified	Polyporales sp	99.23	KR015965
515	2010	Wanang	Ficus pungens	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.7	KR015970
517	2010	Wanang	Macaranga bifoveata	29	SH192878.07FU	Hymenochaetaceae	Phellinus	Phellinus noxius	98.7	KR015976
522	2010	Wanang	Ficus variegata	8	SH195649.07FU	Glomerellaceae	Colletotrichum	Colletotrichum xanthorrhoeae	98.2	KR015986
523	2010	Wanang	Ficus variegata	8	SH195649.07FU	Glomerellaceae	Colletotrichum	Colletotrichum xanthorrhoeae	98.57	KR015990
527	2010	Wanang	Macaranga bifoveata	48	SH187150.07FU	Xylariaceae	Hypoxylon	Hypoxylon sp LC06	97.5	KR015992
528	2010	Wanang	Ficus pungens	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.41	KR015993
530	2010	Wanang	Ficus pungens	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR015996
531	2010	Wanang	Ficus pungens	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.48	KR015999
532	2010	Wanang	Macaranga punctata	8	SH261145.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nupharicola	99.36	KR016000
533	2010	Wanang	Macaranga punctata	8	SH195649.07FU	Glomerellaceae	Colletotrichum	Colletotrichum xanthorrhoeae	98.57	KR016001
536	2010	Wanang	Macaranga bifoveata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.1	KR016003
537	2010	Wanang	Macaranga bifoveata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.63	KR016005
538	2010	Wanang	Ficus hahliana	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016006
539	2010	Wanang	Ficus hahliana	15	SH127902.07FU	Davidiellaceae	Cladosporium	Cladosporium halotolerans	100	KR016007
540	2010	Wanang	Ficus variegata	44	SH176593.07FU	Xylariaceae	unidentified	Xylariaceae sp	100	KR016009
541	2010	Wanang	Ficus variegata	3	SH212802.07FU	unidentified	unidentified	Sordariomycetes sp	99.79	KR016010
544	2010	Wanang	Ficus variegata	50	SH197054.07FU	unidentified	unidentified	Basidiomycota sp	98.73	KR016012
548	2010	Wanang	Macaranga fallacina	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.71	KR016014
549	2010	Wanang	Macaranga fallacina	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016015
550	2010	Wanang	Macaranga bifoveata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.78	KR016017
552	2010	Wanang	Ficus hahliana	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.68	KR016018
553	2010	Wanang	Ficus hahliana	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.9	KR016019
554	2010	Wanang	Macaranga bifoveata	15	SH127902.07FU	Davidiellaceae	Cladosporium	Cladosporium halotolerans	99.78	KR016020
555	2010	Wanang	Macaranga bifoveata	4	SH195663.07FU	Glomerellaceae	Colletotrichum	Colletotrichum sp IP 43	97.99	KR016022

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556	2010	Wanang	Syzygium longipes	8	SH195649.07FU	Glomerellaceae	Colletotrichum	Colletotrichum xanthorrhoeae	98.77	KR016029
557	2010	Wanang	Macaranga punctata	8	SH195649.07FU	Glomerellaceae	Colletotrichum	Colletotrichum xanthorrhoeae	98.37	KR016030
559	2010	Wanang	Ficus pungens	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016036
560	2010	Wanang	Macaranga punctata	8	SH195649.07FU	Glomerellaceae	Colletotrichum	Colletotrichum xanthorrhoeae	98.77	KR016039
561	2010	Wanang	Macaranga fallacina	8	SH261145.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nupharicola	99.56	KR016042
567	2010	Wanang	Ficus pungens	5	SH190215.07FU	Trichocomaceae	Penicillium	Penicillium citrinum	100	KR016057
569	2010	Wanang	Macaranga bifoveata	9	SH198965.07FU	unidentified	unidentified	Ascomycota sp	99.82	KR016064
571	2010	Wanang	Macaranga bifoveata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.58	KR016066
572	2010	Wanang	Macaranga bifoveata	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016068
573	2010	Wanang	Ficus hahliana	19	SH195067.07FU	Xylariaceae	Xylaria	Xylaria sp	96.96	KR016073
575	2010	Wanang	Macaranga punctata	9	SH198965.07FU	unidentified	unidentified	Ascomycota sp	100	KR016081
576	2010	Wanang	Macaranga punctata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.4	KR016084
579	2010	Wanang	Ficus hahliana	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.78	KR016094
580	2010	Wanang	Macaranga bifoveata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.78	KR016099
582	2010	Wanang	Ficus hahliana	21	SH200978.07FU	Diaporthaceae	unidentified	Diaporthaceae sp	98.72	KR016108
583	2010	Wanang	Ficus hahliana	7	SH195657.07FU	Glomerellaceae	unidentified	Glomerellaceae sp	98.67	KR016111
586	2010	Wanang	Macaranga punctata	16	SH207303.07FU	Glomerellaceae	unidentified	Glomerellaceae sp	99.4	KR016122
588	2010	Wanang	Macaranga bifoveata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.66	KR016135
596	2010	Wanang	Syzygium longipes	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.78	KR016179
599	2010	Wanang	Ficus variegata	16	SH207303.07FU	Glomerellaceae	unidentified	Glomerellaceae sp	99.4	KR016192
600	2010	Wanang	Macaranga bifoveata	9	SH198965.07FU	unidentified	unidentified	Ascomycota sp	100	KR016197
606	2010	Wanang	Ficus variegata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.62	KR016226
608	2010	Wanang	Ficus variegata	8	SH375666.07FU	Glomerellaceae	Colletotrichum	Colletotrichum tropicicola	99.79	KR016241
610	2010	Wanang	Ficus pungens	16	SH207303.07FU	Glomerellaceae	unidentified	Glomerellaceae sp	99.22	KR016249
612	2010	Wanang	Macaranga punctata	18	SH195462.07FU	Botryosphaeriaceae	Endomelanconiopsis	Endomelanconiopsis endophytica	100	KR016262
614	2010	Wanang	Ficus pungens	8	SH195649.07FU	Glomerellaceae	Colletotrichum	Colletotrichum xanthorrhoeae	98.4	KR016271
615	2010	Wanang	Ficus pungens	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.29	KR016278
617	2010	Wanang	Ficus variegata	16	SH207303.07FU	Glomerellaceae	unidentified	Glomerellaceae sp	98.41	KR016293
618	2010	Wanang	Ficus variegata	16	SH207303.07FU	Glomerellaceae	unidentified	Glomerellaceae sp	98.57	KR016300
622	2010	Wanang	Ficus pungens	50	SH197054.07FU	unidentified	unidentified	Basidiomycota sp	98.73	KR016326
625	2010	Wanang	Ficus hahliana	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.36	KR016343

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627	2010	Wanang	Macaranga fallacina	9	SH198965.07FU	unidentified	unidentified	Ascomycota sp	100	KR016354
628	2010	Wanang	Macaranga punctata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	98.18	KR016360
629	2010	Wanang	Ficus hahliana	18	SH195462.07FU	Botryosphaeriaceae	Endomelanconiopsis	Endomelanconiopsis endophytica	99.53	KR016365
630	2010	Wanang	Macaranga punctata	18	SH195462.07FU	Botryosphaeriaceae	Endomelanconiopsis	Endomelanconiopsis endophytica	99.59	KR016370
632	2010	Wanang	Ficus hahliana	18	SH195462.07FU	Botryosphaeriaceae	Endomelanconiopsis	Endomelanconiopsis endophytica	99.76	KR016384
633	2010	Wanang	Ficus variegata	8	SH375666.07FU	Glomerellaceae	Colletotrichum	Colletotrichum tropicicola	99.58	KR016389
636	2010	Wanang	Ficus pungens	7	SH195652.07FU	Glomerellaceae	unidentified	Glomerellaceae sp	100	KR016398
637	2010	Wanang	Macaranga punctata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97	KR016403
638	2010	Wanang	Ficus pungens	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.48	KR016407
639	2010	Wanang	Macaranga fallacina	8	SH261145.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nupharicola	99.18	KR016412
641	2010	Wanang	Syzygium longipes	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.6	KR016421
642	2010	Wanang	Ficus variegata	9	SH198965.07FU	unidentified	unidentified	Ascomycota sp	99.82	KR016425
645	2010	Wanang	Macaranga punctata	2	SH191438.07FU	Xylariaceae	Hypoxylon	Hypoxylon pulicicidum	87.6	KR016438
645	2010	Wanang	Macaranga punctata	2	SH191438.07FU	Xylariaceae	Hypoxylon	Hypoxylon pulicicidum	98.49	KR016438
646	2010	Wanang	Macaranga punctata	9	SH198965.07FU	unidentified	unidentified	Ascomycota sp	100	KR016442
648	2010	Wanang	Macaranga fallacina	9	SH198965.07FU	unidentified	unidentified	Ascomycota sp	99.82	KR016451
651	2010	Wanang	Syzygium longipes	8	SH261145.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nupharicola	99.37	KR016459
652	2010	Wanang	Syzygium longipes	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.7	KR016463
653	2010	Wanang	Syzygium longipes	4	SH195663.07FU	Glomerellaceae	Colletotrichum	Colletotrichum sp IP 43	98.19	KR016467
657	2010	Wanang	Syzygium longipes	7	SH195667.07FU	Glomerellaceae	unidentified	Glomerellaceae sp	97.03	KR016483
660	2010	Wanang	Macaranga fallacina	8	SH195649.07FU	Glomerellaceae	Colletotrichum	Colletotrichum xanthorrhoeae	98	KR016498
661	2010	Wanang	Syzygium longipes	53	SH349697.07FU	Phanerochaetaceae	Hyphodermella	Hyphodermella corrugata	94.8	KR016504
662	2010	Wanang	Psychotria leptothyrsa	4	SH195663.07FU	Glomerellaceae	Colletotrichum	Colletotrichum sp IP 43	98.99	KR016507
663	2010	Wanang	Macaranga bifoveata	9	SH198965.07FU	unidentified	unidentified	Ascomycota sp	100	KR016514
665	2010	Wanang	Macaranga fallacina	9	SH198965.07FU	unidentified	unidentified	Ascomycota sp	99.64	KR016528
667	2010	Wanang	Ficus pungens	18	SH195462.07FU	Botryosphaeriaceae	Endomelanconiopsis	Endomelanconiopsis endophytica	99.8	KR016538
669	2010	Wanang	Macaranga punctata	18	SH195462.07FU	Botryosphaeriaceae	Endomelanconiopsis	Endomelanconiopsis endophytica	99.61	KR016546
670	2010	Wanang	Macaranga punctata	9	SH198965.07FU	unidentified	unidentified	Ascomycota sp	99.64	KR016553
672	2010	Wanang	Syzygium longipes	4	SH195663.07FU	Glomerellaceae	Colletotrichum	Colletotrichum sp IP 43	98.79	KR016558
674	2010	Wanang	Ficus pungens	8	SH195649.07FU	Glomerellaceae	Colletotrichum	Colletotrichum xanthorrhoeae	98.77	KR016560
676	2010	Wanang	Ficus pungens	8	SH195649.07FU	Glomerellaceae	Colletotrichum	Colletotrichum xanthorrhoeae	98.4	KR016575

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677	2010	Wanang	Macaranga fallacina	9	SH198965.07FU	unidentified	unidentified	Ascomycota sp	99.82	KR016583
678	2010	Wanang	Macaranga fallacina	9	SH198965.07FU	unidentified	unidentified	Ascomycota sp	99.64	KR016585
679	2010	Wanang	Syzygium longipes	8	SH261145.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nupharicola	99.38	KR016588
680	2010	Wanang	Syzygium longipes	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.29	KR016592
681	2010	Wanang	Ficus pungens	5	SH190215.07FU	Trichocomaceae	Penicillium	Penicillium citrinum	100	KR016599
682	2010	Wanang	Ficus pungens	8	SH261145.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nupharicola	99.17	KR016606
683	2010	Wanang	Macaranga fallacina	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.79	KR016610
687	2010	Wanang	Ficus hahliana	29	SH012312.07FU	Hymenochaetaceae	Phellinus	Phellinus noxius	99.05	KR016621
697	2010	Wanang	Syzygium longipes	5	SH190215.07FU	Trichocomaceae	Penicillium	Penicillium citrinum	100	KR016667
698	2010	Wanang	Syzygium longipes	12	SH200163.07FU	Hyponectriaceae	Beltraniella	Beltraniella sp	96.74	KR016675
699	2010	Wanang	Syzygium longipes	31	SH188258.07FU	unidentified	unidentified	Agaricomycetes sp	99.43	KR016681
709	2010	Wanang	Ficus pungens	8	SH195649.07FU	Glomerellaceae	Colletotrichum	Colletotrichum xanthorrhoeae	98.2	KR016738
710	2010	Wanang	Macaranga punctata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.97	KR016745
712	2010	Wanang	Ficus hahliana	9	SH198965.07FU	unidentified	unidentified	Ascomycota sp	99.64	KR016755
713	2010	Wanang	Ficus pungens	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.51	KR016759
714	2010	Wanang	Macaranga punctata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.49	KR016764
716	2010	Wanang	Ficus pungens	1	SH408631.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nymphaeae	99.21	KR016778
718	2010	Wanang	Macaranga punctata	18	SH195462.07FU	Botryosphaeriaceae	Endomelanconiopsis	Endomelanconiopsis endophytica	99.38	KR016783
719	2010	Wanang	Macaranga punctata	20	SH007248.07FU	unidentified	unidentified	Polyporales sp pse65	99.11	KR016784
723	2010	Wanang	Ficus variegata	8	SH261145.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nupharicola	99.77	KR016810
724	2010	Wanang	Ficus variegata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.79	KR016816
728	2010	Wanang	Macaranga bifoveata	13	SH198541.07FU	unidentified	unidentified	Polyporales sp	99.27	KR016817
732	2010	Wanang	Ficus hahliana	3	SH212802.07FU	unidentified	unidentified	Sordariomycetes sp	100	KR016818
733	2010	Wanang	Macaranga bifoveata	8	SH261145.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nupharicola	99.54	KR016819
735	2010	Wanang	Ficus variegata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.42	KR016826
736	2010	Wanang	Macaranga punctata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.52	KR016830
740	2010	Wanang	Ficus variegata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.23	KR016831
741	2010	Wanang	Macaranga fallacina	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.75	KR016832
742	2010	Wanang	Macaranga fallacina	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.34	KR016833
743	2010	Wanang	Macaranga fallacina	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.62	KR016834
744	2010	Wanang	Macaranga fallacina	3	SH212802.07FU	unidentified	unidentified	Sordariomycetes sp	99.79	KR016835

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745	2010	Wanang	Macaranga fallacina	8	SH261145.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nupharicola	99.54	KR016836
746	2010	Wanang	Macaranga fallacina	8	SH261145.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nupharicola	99.37	KR016837
747	2010	Wanang	Ficus pungens	19	SH195067.07FU	Xylariaceae	Xylaria	Xylaria sp	97.24	KR016838
754	2010	Wanang	Macaranga punctata	46	SH220348.07FU	Psathyrellaceae	unidentified	Psathyrellaceae sp	98.52	KR016840
755	2010	Wanang	Macaranga punctata	3	SH212802.07FU	unidentified	unidentified	Sordariomycetes sp	100	KR016841
757	2010	Wanang	Macaranga fallacina	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016842
758	2010	Wanang	Macaranga fallacina	9	SH198965.07FU	unidentified	unidentified	Ascomycota sp	100	KR016843
759	2010	Wanang	Macaranga punctata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.29	KR016844
761	2010	Wanang	Macaranga punctata	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016845
762	2010	Wanang	Macaranga bifoveata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.08	KR016846
763	2010	Wanang	Macaranga punctata	18	SH195462.07FU	Botryosphaeriaceae	Endomelanconiopsis	Endomelanconiopsis endophytica	99.79	KR016847
765	2010	Wanang	Syzygium longipes	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.4	KR016848
766	2010	Wanang	Syzygium longipes	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.36	KR016849
767	2010	Wanang	Macaranga bifoveata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.7	KR016850
769	2010	Wanang	Macaranga punctata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.3	KR016851
770	2010	Wanang	Ficus pungens	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.3	KR016852
771	2010	Wanang	Ficus pungens	8	SH261145.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nupharicola	99.18	KR016853
773	2010	Wanang	Ficus pungens	18	SH195462.07FU	Botryosphaeriaceae	Endomelanconiopsis	Endomelanconiopsis endophytica	99.59	KR016854
774	2010	Wanang	Ficus hahliana	18	SH195462.07FU	Botryosphaeriaceae	Endomelanconiopsis	Endomelanconiopsis endophytica	99.8	KR016855
775	2010	Wanang	Ficus hahliana	9	SH198965.07FU	unidentified	unidentified	Ascomycota sp	99.64	KR016856
776	2010	Wanang	Macaranga punctata	16	SH207303.07FU	Glomerellaceae	unidentified	Glomerellaceae sp	99.22	KR016857
778	2010	Wanang	Ficus pungens	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.23	KR016858
779	2010	Wanang	Ficus hahliana	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	98.01	KR016859
780	2010	Wanang	Ficus hahliana	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.47	KR016860
781	2010	Wanang	Psychotria leptothyrsa	16	SH207303.07FU	Glomerellaceae	unidentified	Glomerellaceae sp	98.57	KR016861
782	2010	Wanang	Macaranga fallacina	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.7	KR016862
784	2010	Wanang	Macaranga fallacina	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.1	KR016863
785	2010	Wanang	Ficus pungens	8	SH195649.07FU	Glomerellaceae	Colletotrichum	Colletotrichum xanthorrhoeae	98.4	KR016864
786	2010	Wanang	Macaranga fallacina	7	SH195657.07FU	Glomerellaceae	unidentified	Glomerellaceae sp	99.08	KR016865
788	2010	Wanang	Macaranga fallacina	8	SH195649.07FU	Glomerellaceae	Colletotrichum	Colletotrichum xanthorrhoeae	98.2	KR016866
789	2010	Wanang	Macaranga punctata	9	SH198965.07FU	unidentified	unidentified	Ascomycota sp	99.6	KR016867

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790	2010	Wanang	Macaranga punctata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.4	KR016869
791	2010	Wanang	Psychotria leptothyrsa	8	SH195649.07FU	Glomerellaceae	Colletotrichum	Colletotrichum xanthorrhoeae	98.4	KR016870
792	2010	Wanang	Macaranga fallacina	9	SH198965.07FU	unidentified	unidentified	Ascomycota sp	99.64	KR016871
793	2010	Wanang	Syzygium longipes	8	SH375612.07FU	Glomerellaceae	Colletotrichum	Colletotrichum viniferum	99.01	KR016872
794	2010	Wanang	Syzygium longipes	8	SH195649.07FU	Glomerellaceae	Colletotrichum	Colletotrichum xanthorrhoeae	98.4	KR016873
795	2010	Wanang	Psychotria leptothyrsa	16	SH207303.07FU	Glomerellaceae	unidentified	Glomerellaceae sp	99.22	KR016874
796	2010	Wanang	Syzygium longipes	4	SH195663.07FU	Glomerellaceae	Colletotrichum	Colletotrichum sp IP 43	98.98	KR016875
797	2010	Wanang	Syzygium longipes	4	SH195663.07FU	Glomerellaceae	Colletotrichum	Colletotrichum sp IP 43	98.79	KR016876
798	2010	Wanang	Syzygium longipes	8	SH261145.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nupharicola	99.77	KR016877
800	2010	Wanang	Psychotria leptothyrsa	7	SH195652.07FU	Glomerellaceae	unidentified	Glomerellaceae sp	99.77	KR016880
801	2010	Wanang	Ficus hahliana	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.91	KR016881
803	2010	Wanang	Psychotria leptothyrsa	7	SH195652.07FU	Glomerellaceae	unidentified	Glomerellaceae sp	99.77	KR016882
804	2010	Wanang	Syzygium longipes	41	SH187156.07FU	Xylariaceae	Hypoxylon	Hypoxylon investiens	99.64	KR016883
806	2010	Wanang	Syzygium longipes	13	SH198541.07FU	unidentified	unidentified	Polyporales sp	99.29	KR016884
807	2010	Wanang	Syzygium longipes	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.64	KR016885
808	2010	Wanang	Ficus pungens	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.56	KR016886
809	2010	Wanang	Psychotria leptothyrsa	8	SH195649.07FU	Glomerellaceae	Colletotrichum	Colletotrichum xanthorrhoeae	98.56	KR016887
811	2010	Wanang	Syzygium longipes	8	SH195649.07FU	Glomerellaceae	Colletotrichum	Colletotrichum xanthorrhoeae	98.4	KR016889
813	2010	Wanang	Syzygium longipes	49	SH197714.07FU	Incertae_sedis	Candida	Candida parapsilosis	99.77	KR016890
814	2010	Wanang	Psychotria leptothyrsa	8	SH195649.07FU	Glomerellaceae	Colletotrichum	Colletotrichum xanthorrhoeae	98.57	KR016891
815	2010	Wanang	Psychotria leptothyrsa	8	SH195649.07FU	Glomerellaceae	Colletotrichum	Colletotrichum xanthorrhoeae	98.4	KR016892
816	2010	Wanang	Syzygium longipes	8	SH261145.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nupharicola	99.18	KR016893
818	2010	Wanang	Syzygium longipes	8	SH195649.07FU	Glomerellaceae	Colletotrichum	Colletotrichum xanthorrhoeae	98.2	KR016894
819	2010	Wanang	Syzygium longipes	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.34	KR016895
820	2010	Wanang	Macaranga fallacina	7	SH195657.07FU	Glomerellaceae	unidentified	Glomerellaceae sp	100	KR016897
821	2010	Wanang	Psychotria leptothyrsa	17	SH193088.07FU	Incertae_sedis	Geosmithia	Geosmithia sp 2 FR 2014	97.88	KR016898
822	2010	Wanang	Psychotria leptothyrsa	8	SH261145.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nupharicola	99.37	KR016899
823	2010	Wanang	Syzygium longipes	40	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	95.14	KR016900
824	2010	Wanang	Psychotria leptothyrsa	26	SH182678.07FU	Bionectriaceae	Clonostachys	Clonostachys rosea f. catenulata	98.1	KR016901
825	2010	Wanang	Psychotria leptothyrsa	14	SH187148.07FU	Xylariaceae	Hypoxylon	Hypoxylon sp	98.41	KR016902
826	2010	Wanang	Ficus pungens	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.63	KR016903

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827	2010	Wanang	Ficus pungens	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016904
829	2010	Wanang	Ficus variegata	8	SH261145.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nupharicola	99.37	KR016905
830	2010	Wanang	Ficus variegata	8	SH261145.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nupharicola	99.38	KR016906
831	2010	Wanang	Macaranga bifoveata	8	SH261145.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nupharicola	99.37	KR016907
832	2010	Wanang	Ficus pungens	8	SH261145.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nupharicola	99.37	KR016908
834	2010	Wanang	Ficus hahliana	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016909
835	2010	Wanang	Ficus hahliana	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.27	KR016910
836	2010	Wanang	Ficus hahliana	15	SH127902.07FU	Davidiellaceae	Cladosporium	Cladosporium halotolerans	99.16	KR016911
837	2010	Wanang	Macaranga punctata	18	SH195462.07FU	Botryosphaeriaceae	Endomelanconiopsis	Endomelanconiopsis endophytica	99.8	KR016912
838	2010	Wanang	Ficus hahliana	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.69	KR016913
840	2010	Wanang	Macaranga punctata	15	SH127902.07FU	Davidiellaceae	Cladosporium	Cladosporium halotolerans	99.13	KR016915
843	2010	Wanang	Macaranga bifoveata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.78	KR016916
844	2010	Wanang	Ficus pungens	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.63	KR016917
850	2010	Wanang	Ficus pungens	15	SH127902.07FU	Davidiellaceae	Cladosporium	Cladosporium halotolerans	99.15	KR016918
851	2010	Wanang	Ficus hahliana	16	SH207303.07FU	Glomerellaceae	unidentified	Glomerellaceae sp	99.6	KR016919
852	2010	Wanang	Ficus pungens	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.54	KR016920
853	2010	Wanang	Ficus pungens	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.45	KR016921
854	2010	Wanang	Syzygium longipes	12	SH200163.07FU	Hyponectriaceae	Beltraniella	Beltraniella sp	96.55	KR016922
854	2010	Wanang	Syzygium longipes	12	SH200163.07FU	Hyponectriaceae	Beltraniella	Beltraniella sp	98.48	KR016922
855	2010	Wanang	Syzygium longipes	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	98.17	KR016923
856	2010	Wanang	Macaranga punctata	3	SH212802.07FU	unidentified	unidentified	Sordariomycetes sp	100	KR016924
857	2010	Wanang	Ficus pungens	8	SH195649.07FU	Glomerellaceae	Colletotrichum	Colletotrichum xanthorrhoeae	98.2	KR016925
858	2010	Wanang	Ficus variegata	16	SH207303.07FU	Glomerellaceae	unidentified	Glomerellaceae sp	99.6	KR016926
859	2010	Wanang	Macaranga bifoveata	21	SH200978.07FU	Diaporthaceae	unidentified	Diaporthaceae sp	98.98	KR016927
860	2010	Wanang	Ficus pungens	13	SH198541.07FU	unidentified	unidentified	Polyporales sp	99.46	KR016928
861	2010	Wanang	Syzygium longipes	12	SH200168.07FU	unidentified	unidentified	Xylariales sp	97.42	KR016929
862	2010	Wanang	Syzygium longipes	38	SH251186.07FU	Glomerellaceae	Colletotrichum	Colletotrichum beeveri	99.03	KR016930
863	2010	Wanang	Macaranga fallacina	8	SH261145.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nupharicola	99.37	KR016931
867	2010	Wanang	Macaranga bifoveata	8	SH261145.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nupharicola	98.97	KR016932
869	2010	Wanang	Macaranga fallacina	8	SH261145.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nupharicola	99.38	KR016933
870	2010	Wanang	Ficus hahliana	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.24	KR016935

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874	2010	Wanang	Ficus hahliana	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.83	KR016936
875	2010	Wanang	Ficus hahliana	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.83	KR016937
876	2010	Wanang	Macaranga punctata	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.3	KR016938
877	2010	Wanang	Ficus hahliana	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.57	KR016939
878	2010	Wanang	Ficus variegata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.69	KR016940
879	2010	Wanang	Macaranga punctata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.54	KR016941
880	2010	Wanang	Ficus hahliana	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016943
881	2010	Wanang	Ficus hahliana	8	SH261145.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nupharicola	99.18	KR016944
882	2010	Wanang	Ficus hahliana	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016945
883	2010	Wanang	Macaranga bifoveata	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.65	KR016946
885	2010	Wanang	Ficus hahliana	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016947
886	2010	Wanang	Ficus hahliana	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016948
888	2010	Wanang	Macaranga bifoveata	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016949
890	2010	Wanang	Macaranga fallacina	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.66	KR016950
891	2010	Wanang	Macaranga fallacina	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.69	KR016951
894	2010	Wanang	Syzygium longipes	9	SH198965.07FU	unidentified	unidentified	Ascomycota sp	99.64	KR016952
895	2010	Wanang	Macaranga punctata	23	SH195774.07FU	Dothioraceae	Aureobasidium	Aureobasidium pullulans	98.42	KR016953
896	2010	Wanang	Macaranga fallacina	23	SH195774.07FU	Dothioraceae	Aureobasidium	Aureobasidium pullulans	98.62	KR016954
898	2010	Wanang	Ficus variegata	8	SH261145.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nupharicola	99.38	KR016955
901	2010	Wanang	Syzygium longipes	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.83	KR016957
903	2010	Wanang	Macaranga fallacina	8	SH195649.07FU	Glomerellaceae	Colletotrichum	Colletotrichum xanthorrhoeae	98	KR016958
905	2010	Wanang	Macaranga fallacina	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016959
906	2010	Wanang	Macaranga bifoveata	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.8	KR016960
908	2010	Wanang	Macaranga punctata	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016961
910	2010	Wanang	Macaranga fallacina	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016962
911	2010	Wanang	Macaranga punctata	7	SH195657.07FU	Glomerellaceae	unidentified	Glomerellaceae sp	98.67	KR016963
912	2010	Wanang	Macaranga fallacina	8	SH195649.07FU	Glomerellaceae	Colletotrichum	Colletotrichum xanthorrhoeae	98	KR016964
914	2010	Wanang	Psychotria leptothyrsa	8	SH195649.07FU	Glomerellaceae	Colletotrichum	Colletotrichum xanthorrhoeae	98.78	KR016965
915	2010	Wanang	Ficus pungens	16	SH207303.07FU	Glomerellaceae	unidentified	Glomerellaceae sp	99.02	KR016966
916	2010	Wanang	Syzygium longipes	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.83	KR016967
917	2010	Wanang	Ficus hahliana	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016968

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918	2010	Wanang	Macaranga bifoveata	7	SH195652.07FU	Glomerellaceae	unidentified	Glomerellaceae sp	100	KR016969
919	2010	Wanang	Macaranga fallacina	7	SH195657.07FU	Glomerellaceae	unidentified	Glomerellaceae sp	99.1	KR016970
922	2010	Wanang	Ficus pungens	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	98.78	KR016972
926	2010	Wanang	Macaranga fallacina	27	SH197058.07FU	Polyporaceae	Trametes	Trametes maxima	100	KR016973
927	2010	Wanang	Ficus hahliana	9	SH198965.07FU	unidentified	unidentified	Ascomycota sp	100	KR016974
930	2010	Wanang	Ficus hahliana	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.6	KR016975
931	2010	Wanang	Macaranga bifoveata	54	SH174595.07FU	unidentified	unidentified	Sordariomycetes sp	99.77	KR016976
932	2010	Wanang	Syzygium longipes	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.26	KR016977
934	2010	Wanang	Ficus hahliana	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.7	KR016978
936	2010	Wanang	Macaranga punctata	20	SH007248.07FU	unidentified	unidentified	Polyporales sp pse65	98.93	KR016979
937	2010	Wanang	Macaranga bifoveata	8	SH195649.07FU	Glomerellaceae	Colletotrichum	Colletotrichum xanthorrhoeae	98.6	KR016980
938	2010	Wanang	Macaranga punctata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	98.21	KR016981
939	2010	Wanang	Macaranga fallacina	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.21	KR016982
941	2010	Wanang	Ficus hahliana	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.79	KR016984
942	2010	Wanang	Macaranga bifoveata	21	SH210870.07FU	unidentified	unidentified	Ascomycota sp	96.63	KR016985
943	2010	Wanang	Syzygium longipes	8	SH375666.07FU	Glomerellaceae	Colletotrichum	Colletotrichum tropicicola	99.18	KR016986
944	2010	Wanang	Syzygium longipes	22	SH192552.07FU	Debaryomycetaceae	Meyerozyma	Meyerozyma guilliermondii	99.81	KR016987
946	2010	Wanang	Macaranga punctata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.7	KR016988
947	2010	Wanang	Macaranga bifoveata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.59	KR016989
948	2010	Wanang	Ficus hahliana	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	98.63	KR016990
951	2010	Wanang	Macaranga fallacina	2	SH191438.07FU	Xylariaceae	Hypoxylon	Hypoxylon pulicicidum	98.28	KR016992
951	2010	Wanang	Macaranga fallacina	2	SH191438.07FU	Xylariaceae	Hypoxylon	Hypoxylon pulicicidum	89.15	KR016992
952	2010	Wanang	Ficus variegata	16	SH207303.07FU	Glomerellaceae	unidentified	Glomerellaceae sp	99.6	KR016993
953	2010	Wanang	Macaranga punctata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.26	KR016994
956	2010	Wanang	Macaranga punctata	8	SH261145.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nupharicola	99.38	KR016995
957	2010	Wanang	Ficus pungens	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.48	KR016996
959	2010	Wanang	Macaranga fallacina	13	SH198541.07FU	unidentified	unidentified	Polyporales sp	99.45	KR016997
972	2010	Wanang	Psychotria leptothyrsa	37	SH190216.07FU	Trichocomaceae	Penicillium	Penicillium steckii	100	KR016999
973	2010	Wanang	Syzygium longipes	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.48	KR017000
975	2010	Wanang	Ficus variegata	8	SH261145.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nupharicola	99.38	KR017001
977	2010	Wanang	Macaranga bifoveata	8	SH261145.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nupharicola	99.38	KR017002

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979	2010	Wanang	Psychotria leptothyrsa	29	SH192878.07FU	Hymenochaetaceae	Phellinus	Phellinus noxius	99.02	KR017003
981	2010	Wanang	Ficus hahliana	36	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	92.67	KR017005
982	2010	Wanang	Psychotria leptothyrsa	8	SH195649.07FU	Glomerellaceae	Colletotrichum	Colletotrichum xanthorrhoeae	98.8	KR017006
983	2010	Wanang	Macaranga punctata	42	SH195932.07FU	Xylariaceae	Muscodor	Muscodor sp	100	KR017007
984	2010	Wanang	Psychotria leptothyrsa	8	SH195649.07FU	Glomerellaceae	Colletotrichum	Colletotrichum xanthorrhoeae	98.4	KR017008
986	2010	Wanang	Ficus variegata	8	SH195649.07FU	Glomerellaceae	Colletotrichum	Colletotrichum xanthorrhoeae	98.6	KR017009
988	2010	Wanang	Ficus variegata	36	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	90.08	KR017010
991	2010	Wanang	Ficus pungens	16	SH207303.07FU	Glomerellaceae	unidentified	Glomerellaceae sp	98.59	KR017012
992	2010	Wanang	Ficus variegata	37	SH190216.07FU	Trichocomaceae	Penicillium	Penicillium steckii	100	KR017013
993	2010	Wanang	Ficus variegata	9	SH198965.07FU	unidentified	unidentified	Ascomycota sp	100	KR017014
994	2010	Wanang	Ficus variegata	8	SH195649.07FU	Glomerellaceae	Colletotrichum	Colletotrichum xanthorrhoeae	98.6	KR017015
996	2010	Wanang	Ficus variegata	16	SH207303.07FU	Glomerellaceae	unidentified	Glomerellaceae sp	99.6	KR017016
997	2010	Wanang	Ficus variegata	16	SH207303.07FU	Glomerellaceae	unidentified	Glomerellaceae sp	99.6	KR017017
999	2010	Wanang	Ficus variegata	8	SH261145.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nupharicola	99.77	KR017018
1000	2010	Wanang	Ficus variegata	9	SH198965.07FU	unidentified	unidentified	Ascomycota sp	100	KR014948
1002	2010	Wanang	Ficus variegata	16	SH207303.07FU	Glomerellaceae	unidentified	Glomerellaceae sp	99.59	KR014949
1003	2010	Wanang	Ficus variegata	16	SH207303.07FU	Glomerellaceae	unidentified	Glomerellaceae sp	99.6	KR014950
1004	2010	Wanang	Ficus variegata	5	SH190215.07FU	Trichocomaceae	Penicillium	Penicillium citrinum	99.77	KR014951
1006	2010	Wanang	Ficus pungens	4	SH195663.07FU	Glomerellaceae	Colletotrichum	Colletotrichum sp IP 43	98.19	KR014952
1007	2010	Wanang	Ficus variegata	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR014953
1023	2010	Wanang	Macaranga bifoveata	5	SH190215.07FU	Trichocomaceae	Penicillium	Penicillium citrinum	100	KR014955
1048	2010	Wanang	Macaranga bifoveata	44	SH176593.07FU	Xylariaceae	unidentified	Xylariaceae sp	100	KR014956
1054	2010	Wanang	Macaranga bifoveata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.88	KR014957
1072	2010	Wanang	Ficus variegata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.79	KR014959
1074	2010	Wanang	Ficus variegata	5	SH190215.07FU	Trichocomaceae	Penicillium	Penicillium citrinum	100	KR014960
1075	2010	Wanang	Ficus variegata	8	SH375666.07FU	Glomerellaceae	Colletotrichum	Colletotrichum tropicicola	99.18	KR014961
1076	2010	Wanang	Macaranga bifoveata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.6	KR014962
1077	2010	Wanang	Macaranga bifoveata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.35	KR014963
1078	2010	Wanang	Macaranga bifoveata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.85	KR014964
1115	2010	Wanang	Macaranga bifoveata	8	SH261145.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nupharicola	99.18	KR014969
1125	2010	Wanang	Ficus variegata	8	SH195649.07FU	Glomerellaceae	Colletotrichum	Colletotrichum xanthorrhoeae	98.37	KR014970

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1137	2010	Wanang	Ficus variegata	8	SH195649.07FU	Glomerellaceae	Colletotrichum	Colletotrichum xanthorrhoeae	98.39	KR014972
1140	2010	Wanang	Ficus variegata	8	SH261145.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nupharicola	99.38	KR014973
1151	2010	Wanang	Psychotria leptothyrsa	59	SH181399.07FU	Nectriaceae	Fusarium	Fusarium pseudensiforme	97.56	KR014975
1154	2010	Wanang	Macaranga bifoveata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.51	KR014976
1155	2010	Wanang	Macaranga bifoveata	8	SH261145.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nupharicola	99.18	KR014977
1160	2010	Wanang	Ficus variegata	8	SH261145.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nupharicola	98.97	KR014978
1493	2010	Wanang	Ficus variegata	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR014993
1496	2010	Wanang	Ficus hahliana	43	SH185519.07FU	unidentified	unidentified	Diaporthales sp	96.47	KR014994
1501	2010	Wanang	Gnetum gnemon	9	SH198965.07FU	unidentified	unidentified	Ascomycota sp	100	KR014996
1502	2010	Wanang	Gnetum gnemon	13	SH198541.07FU	unidentified	unidentified	Polyporales sp	99.47	KR014997
1503	2010	Wanang	Gnetum gnemon	5	SH190215.07FU	Trichocomaceae	Penicillium	Penicillium citrinum	100	KR014998
1504	2010	Wanang	Gnetum gnemon	5	SH190215.07FU	Trichocomaceae	Penicillium	Penicillium citrinum	100	KR014999
1506	2010	Wanang	Gnetum gnemon	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.08	KR015000
1508	2010	Wanang	Gnetum gnemon	8	SH195649.07FU	Glomerellaceae	Colletotrichum	Colletotrichum xanthorrhoeae	98.56	KR015001
1509	2010	Wanang	Gnetum gnemon	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.75	KR015002
1510	2010	Wanang	Gnetum gnemon	13	SH198541.07FU	unidentified	unidentified	Polyporales sp	99.47	KR015004
1514	2010	Wanang	Gnetum gnemon	8	SH261145.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nupharicola	99.36	KR015005
1515	2010	Wanang	Gnetum gnemon	20	SH007248.07FU	unidentified	unidentified	Polyporales sp pse65	98.93	KR015006
1516	2010	Wanang	Gnetum gnemon	1	SH408631.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nymphaeae	99.2	KR015007
1518	2010	Wanang	Gnetum gnemon	16	SH207303.07FU	Glomerellaceae	unidentified	Glomerellaceae sp	99.22	KR015008
1519	2010	Wanang	Gnetum gnemon	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.61	KR015009
1520	2010	Wanang	Gnetum gnemon	5	SH190215.07FU	Trichocomaceae	Penicillium	Penicillium citrinum	100	KR015011
1521	2010	Wanang	Gnetum gnemon	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.47	KR015012
1522	2010	Wanang	Gnetum gnemon	8	SH195649.07FU	Glomerellaceae	Colletotrichum	Colletotrichum xanthorrhoeae	98	KR015013
1523	2010	Wanang	Gnetum gnemon	3	SH212802.07FU	unidentified	unidentified	Sordariomycetes sp	99.79	KR015014
1524	2010	Wanang	Gnetum gnemon	8	SH195649.07FU	Glomerellaceae	Colletotrichum	Colletotrichum xanthorrhoeae	98	KR015015
1525	2010	Wanang	Gnetum gnemon	49	SH197714.07FU	Incertae_sedis	Candida	Candida parapsilosis	100	KR015016
1526	2010	Wanang	Gnetum gnemon	49	SH197714.07FU	Incertae_sedis	Candida	Candida parapsilosis	100	KR015017
1527	2010	Wanang	Gnetum gnemon	5	SH190215.07FU	Trichocomaceae	Penicillium	Penicillium citrinum	100	KR015018
1530	2010	Wanang	Gnetum gnemon	8	SH261145.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nupharicola	98.77	KR015020
1531	2010	Wanang	Gnetum gnemon	5	SH190215.07FU	Trichocomaceae	Penicillium	Penicillium citrinum	100	KR015021

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1532	2010	Wanang	Gnetum gnemon	5	SH190215.07FU	Trichocomaceae	Penicillium	Penicillium citrinum	100	KR015022
1536	2010	Wanang	Gnetum gnemon	8	SH195649.07FU	Glomerellaceae	Colletotrichum	Colletotrichum xanthorrhoeae	98.4	KR015023
1538	2010	Wanang	Gnetum gnemon	8	SH195649.07FU	Glomerellaceae	Colletotrichum	Colletotrichum xanthorrhoeae	98.4	KR015024
1539	2010	Wanang	Gnetum gnemon	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.95	KR015025
1541	2010	Wanang	Gnetum gnemon	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.56	KR015026
1543	2010	Wanang	Gnetum gnemon	1	SH408631.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nymphaeae	99.01	KR015027
1544	2010	Wanang	Gnetum gnemon	16	SH207303.07FU	Glomerellaceae	unidentified	Glomerellaceae sp	99.61	KR015028
1546	2010	Wanang	Gnetum gnemon	5	SH190215.07FU	Trichocomaceae	Penicillium	Penicillium citrinum	100	KR015029
1548	2010	Wanang	Gnetum gnemon	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.84	KR015030
1551	2010	Wanang	Gnetum gnemon	9	SH198965.07FU	unidentified	unidentified	Ascomycota sp	100	KR015032
1552	2010	Wanang	Gnetum gnemon	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.66	KR015033
1553	2010	Wanang	Gnetum gnemon	8	SH195649.07FU	Glomerellaceae	Colletotrichum	Colletotrichum xanthorrhoeae	98.4	KR015034
1555	2010	Wanang	Gnetum gnemon	32	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	94.46	KR015035
1556	2010	Wanang	Gnetum gnemon	5	SH190215.07FU	Trichocomaceae	Penicillium	Penicillium citrinum	100	KR015036
1558	2010	Wanang	Gnetum gnemon	16	SH207303.07FU	Glomerellaceae	unidentified	Glomerellaceae sp	99.22	KR015037
1559	2010	Wanang	Gnetum gnemon	1	SH408631.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nymphaeae	99.2	KR015038
1562	2010	Wanang	Gnetum gnemon	1	SH408631.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nymphaeae	99.01	KR015040
1563	2010	Wanang	Gnetum gnemon	5	SH190215.07FU	Trichocomaceae	Penicillium	Penicillium citrinum	100	KR015041
1565	2010	Wanang	Gnetum gnemon	8	SH195649.07FU	Glomerellaceae	Colletotrichum	Colletotrichum xanthorrhoeae	98.54	KR015042
1567	2010	Wanang	Gnetum gnemon	5	SH190215.07FU	Trichocomaceae	Penicillium	Penicillium citrinum	100	KR015043
1571	2010	Wanang	Gnetum gnemon	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.19	KR015044
1573	2010	Wanang	Gnetum gnemon	9	SH198965.07FU	unidentified	unidentified	Ascomycota sp	100	KR015045
1574	2010	Wanang	Gnetum gnemon	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR015046
1577	2010	Wanang	Gnetum gnemon	5	SH190215.07FU	Trichocomaceae	Penicillium	Penicillium citrinum	100	KR015047
1578	2010	Wanang	Gnetum gnemon	8	SH261145.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nupharicola	98.97	KR015048
1579	2010	Wanang	Gnetum gnemon	4	SH195663.07FU	Glomerellaceae	Colletotrichum	Colletotrichum sp IP 43	98.99	KR015049
1582	2010	Wanang	Gnetum gnemon	8	SH261145.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nupharicola	99.16	KR015050
1583	2010	Wanang	Gnetum gnemon	8	SH195649.07FU	Glomerellaceae	Colletotrichum	Colletotrichum xanthorrhoeae	98.4	KR015051
1584	2010	Wanang	Gnetum gnemon	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR015052
1586	2010	Wanang	Gnetum gnemon	8	SH261145.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nupharicola	99.18	KR015053
1587	2010	Wanang	Gnetum gnemon	8	SH195649.07FU	Glomerellaceae	Colletotrichum	Colletotrichum xanthorrhoeae	98.4	KR015054

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1589	2010	Wanang	Gnetum gnemon	8	SH375666.07FU	Glomerellaceae	Colletotrichum	Colletotrichum tropicicola	99.18	KR015055
1591	2010	Wanang	Gnetum gnemon	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.84	KR015057
1592	2010	Wanang	Gnetum gnemon	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.62	KR015058
1593	2010	Wanang	Gnetum gnemon	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.6	KR015059
1594	2010	Wanang	Gnetum gnemon	4	SH195663.07FU	Glomerellaceae	Colletotrichum	Colletotrichum sp IP 43	98.98	KR015060
1596	2010	Wanang	Gnetum gnemon	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.31	KR015061
1597	2010	Wanang	Gnetum gnemon	22	SH192552.07FU	Debaryomycetaceae	Meyerozyma	Meyerozyma guilliermondii	99.24	KR015062
1598	2010	Wanang	Gnetum gnemon	8	SH261145.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nupharicola	99.37	KR015063
1600	2010	Wanang	Gnetum gnemon	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.81	KR015065
1601	2010	Wanang	Gnetum gnemon	13	SH198541.07FU	unidentified	unidentified	Polyporales sp	99.47	KR015066
1602	2010	Wanang	Gnetum gnemon	8	SH195649.07FU	Glomerellaceae	Colletotrichum	Colletotrichum xanthorrhoeae	98.2	KR015067
1615	2010	Wanang	Gnetum gnemon	5	SH190215.07FU	Trichocomaceae	Penicillium	Penicillium citrinum	100	KR015069
1619	2010	Wanang	Gnetum gnemon	9	SH198965.07FU	unidentified	unidentified	Ascomycota sp	100	KR015070
1628	2010	Wanang	Gnetum gnemon	15	SH127903.07FU	Davidiellaceae	Cladosporium	Cladosporium sphaerospermum	100	KR015072
1629	2010	Wanang	Gnetum gnemon	58	SH187962.07FU	Polyporaceae	Lentinus	Lentinus sajor caju	96.92	KR015073
1634	2010	Wanang	Gnetum gnemon	5	SH190215.07FU	Trichocomaceae	Penicillium	Penicillium citrinum	100	KR015074
1641	2010	Wanang	Gnetum gnemon	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	98.03	KR015076
1776	2010	Wanang	Gnetum gnemon	11	SH186189.07FU	unidentified	unidentified	Sordariomycetes sp	99.8	KR015084
1778	2010	Wanang	Gnetum gnemon	51	SH185088.07FU	Polyporaceae	Trametes	Trametes sp HJL 2013b	97.77	KR015085
1781	2010	Wanang	Gnetum gnemon	9	SH198965.07FU	unidentified	unidentified	Ascomycota sp	100	KR015087
1790	2010	Wanang	Gnetum gnemon	9	SH198965.07FU	unidentified	unidentified	Ascomycota sp	99.82	KR015089
1797	2010	Wanang	Gnetum gnemon	9	SH198965.07FU	unidentified	unidentified	Ascomycota sp	99.46	KR015090
2115	2011	Wanang	Ficus pungens	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.85	KR015123
2116	2011	Wanang	Ficus pungens	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.11	KR015124
2117	2011	Wanang	Ficus pungens	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.9	KR015125
2121	2011	Wanang	Ficus pungens	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR015127
2122	2011	Wanang	Ficus pungens	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.81	KR015128
2123	2011	Wanang	Ficus pungens	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.13	KR015129
2124	2011	Wanang	Ficus pungens	56	SH211304.07FU	Halosphaeriaceae	unidentified	Halosphaeriaceae sp	97.63	KR015130
2125	2011	Wanang	Ficus pungens	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.12	KR015131
2128	2011	Wanang	Ficus pungens	79	SH181421.07FU	unidentified	unidentified	Pleosporales sp	98.12	KR015132

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2129	2011	Wanang	Ficus pungens	129	SH389010.07FU	Amphisphaeriaceae	Pestalotiopsis	Pestalotiopsis saprophytica	99.79	KR015133
2130	2011	Wanang	Ficus pungens	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.43	KR015135
2146	2011	Wanang	Ficus pungens	108	SH019813.07FU	Xylariaceae	Xylaria	Xylaria tuberoides	89.34	KR015137
2152	2011	Wanang	Ficus pungens	70	SH413545.07FU	Trichocomaceae	Talaromyces	Talaromyces ruber	99.4	KR015139
2153	2011	Wanang	Ficus pungens	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR015140
2154	2011	Wanang	Ficus pungens	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR015141
2155	2011	Wanang	Ficus pungens	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.97	KR015142
2157	2011	Wanang	Ficus pungens	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.06	KR015143
2158	2011	Wanang	Ficus pungens	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.87	KR015144
2160	2011	Wanang	Ficus pungens	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR015146
2161	2011	Wanang	Ficus pungens	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.74	KR015147
2162	2011	Wanang	Ficus pungens	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.88	KR015148
2186	2011	Wanang	Macaranga bifoveata	94	SH211303.07FU	Halosphaeriaceae	unidentified	Halosphaeriaceae sp	98.8	KR015153
2191	2011	Wanang	Macaranga bifoveata	217	SH461872.07FU	unidentified	unidentified	Hypocreales sp	89.31	KR015155
2192	2011	Wanang	Macaranga bifoveata	94	SH211303.07FU	Halosphaeriaceae	unidentified	Halosphaeriaceae sp	98.4	KR015156
2194	2011	Wanang	Macaranga bifoveata	138	SH025302.07FU	unidentified	unidentified	Microascales sp	93.79	KR015157
2199	2011	Wanang	Macaranga bifoveata	94	SH211303.07FU	Halosphaeriaceae	unidentified	Halosphaeriaceae sp	98.4	KR015158
2204	2011	Wanang	Macaranga bifoveata	94	SH211303.07FU	Halosphaeriaceae	unidentified	Halosphaeriaceae sp	98.4	KR015161
2205	2011	Wanang	Macaranga bifoveata	157	SH025295.07FU	unidentified	unidentified	Microascales sp	94.56	KR015162
2214	2011	Wanang	Macaranga bifoveata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.47	KR015164
2217	2011	Wanang	Macaranga bifoveata	42	SH195932.07FU	Xylariaceae	Muscodor	Muscodor sp	99.21	KR015165
2218	2011	Wanang	Macaranga bifoveata	13	SH198541.07FU	unidentified	unidentified	Polyporales sp	100	KR015166
2219	2011	Wanang	Macaranga bifoveata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.02	KR015167
2220	2011	Wanang	Macaranga bifoveata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.39	KR015169
2221	2011	Wanang	Macaranga bifoveata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.85	KR015170
2222	2011	Wanang	Macaranga bifoveata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.93	KR015171
2225	2011	Wanang	Macaranga bifoveata	56	SH211304.07FU	Halosphaeriaceae	unidentified	Halosphaeriaceae sp	97.63	KR015172
2226	2011	Wanang	Macaranga bifoveata	216	SH025302.07FU	unidentified	unidentified	Microascales sp	93.27	KR015173
2228	2011	Wanang	Macaranga bifoveata	94	SH211303.07FU	Halosphaeriaceae	unidentified	Halosphaeriaceae sp	98.4	KR015174
2230	2011	Wanang	Macaranga bifoveata	94	SH211303.07FU	Halosphaeriaceae	unidentified	Halosphaeriaceae sp	97.87	KR015176
2232	2011	Wanang	Macaranga bifoveata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	98.23	KR015177

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2233	2011	Wanang	Macaranga bifoveata	40	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	93.11	KR015178
2234	2011	Wanang	Ficus hahliana	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.04	KR015179
2235	2011	Wanang	Ficus hahliana	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR015180
2236	2011	Wanang	Ficus hahliana	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.99	KR015181
2238	2011	Wanang	Ficus hahliana	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR015182
2240	2011	Wanang	Ficus hahliana	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.65	KR015184
2247	2011	Wanang	Ficus hahliana	142	SH212868.07FU	unidentified	unidentified	Polyporales sp	99.82	KR015185
2249	2011	Wanang	Ficus hahliana	210	SH207632.07FU	Fomitopsidaceae	Fomitopsis	Fomitopsis sp X1419	99.83	KR015186
2254	2011	Wanang	Ficus hahliana	40	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	92.9	KR015188
2256	2011	Wanang	Ficus hahliana	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR015189
2257	2011	Wanang	Ficus hahliana	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.15	KR015190
2260	2011	Wanang	Ficus hahliana	56	SH211304.07FU	Halosphaeriaceae	unidentified	Halosphaeriaceae sp	97.63	KR015191
2261	2011	Wanang	Ficus hahliana	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	98.06	KR015192
2262	2011	Wanang	Ficus hahliana	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.3	KR015193
2263	2011	Wanang	Ficus hahliana	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.02	KR015194
2270	2011	Wanang	Ficus hahliana	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.83	KR015195
2271	2011	Wanang	Ficus hahliana	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR015196
2275	2011	Wanang	Ficus hahliana	5	SH190215.07FU	Trichocomaceae	Penicillium	Penicillium citrinum	100	KR015197
2276	2011	Wanang	Ficus hahliana	215	SH009711.07FU	unidentified	unidentified	fungal sp E14301A	93.32	KR015198
2277	2011	Wanang	Ficus hahliana	138	SH025302.07FU	unidentified	unidentified	Microascales sp	93.58	KR015199
2278	2011	Wanang	Ficus hahliana	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.83	KR015200
2284	2011	Wanang	Ficus hahliana	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.19	KR015202
2285	2011	Wanang	Ficus hahliana	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.01	KR015203
2286	2011	Wanang	Ficus hahliana	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR015204
2287	2011	Wanang	Ficus hahliana	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR015205
2290	2011	Wanang	Ficus hahliana	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR015206
2293	2011	Wanang	Ficus hahliana	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.27	KR015207
2294	2011	Wanang	Macaranga fallacina	40	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	92.91	KR015208
2295	2011	Wanang	Macaranga fallacina	210	SH207632.07FU	Fomitopsidaceae	Fomitopsis	Fomitopsis sp X1419	99.66	KR015209
2296	2011	Wanang	Macaranga fallacina	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.05	KR015210
2298	2011	Wanang	Macaranga fallacina	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.83	KR015211

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2301	2011	Wanang	Macaranga fallacina	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.87	KR015213
2306	2011	Wanang	Macaranga fallacina	210	SH207632.07FU	Fomitopsidaceae	Fomitopsis	Fomitopsis sp X1419	100	KR015214
2307	2011	Wanang	Macaranga fallacina	13	SH198541.07FU	unidentified	unidentified	Polyporales sp	100	KR015215
2319	2011	Wanang	Macaranga fallacina	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.13	KR015216
2325	2011	Wanang	Macaranga fallacina	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.04	KR015217
2327	2011	Wanang	Macaranga fallacina	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.99	KR015218
2335	2011	Wanang	Macaranga fallacina	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.86	KR015220
2336	2011	Wanang	Macaranga fallacina	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.31	KR015221
2339	2011	Wanang	Macaranga fallacina	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	98.03	KR015222
2345	2011	Wanang	Macaranga fallacina	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR015224
2346	2011	Wanang	Macaranga fallacina	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR015225
2347	2011	Wanang	Macaranga fallacina	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.39	KR015226
2351	2011	Wanang	Macaranga fallacina	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.68	KR015228
2353	2011	Wanang	Macaranga fallacina	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.92	KR015229
2364	2011	Wanang	Psychotria leptothyrsa	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.65	KR015230
2365	2011	Wanang	Psychotria leptothyrsa	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.84	KR015231
2367	2011	Wanang	Psychotria leptothyrsa	214	SH187697.07FU	unidentified	unidentified	Polyporales sp	98.38	KR015232
2368	2011	Wanang	Psychotria leptothyrsa	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.13	KR015233
2370	2011	Wanang	Psychotria leptothyrsa	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.03	KR015234
2388	2011	Wanang	Psychotria leptothyrsa	56	SH211304.07FU	Halosphaeriaceae	unidentified	Halosphaeriaceae sp	97.43	KR015236
2394	2011	Wanang	Psychotria leptothyrsa	56	SH211304.07FU	Halosphaeriaceae	unidentified	Halosphaeriaceae sp	97.43	KR015238
2397	2011	Wanang	Psychotria leptothyrsa	40	SH195029.07FU	Xylariaceae	Xylaria	Xylaria sp CR06	95.14	KR015239
2402	2011	Wanang	Psychotria leptothyrsa	13	SH198541.07FU	unidentified	unidentified	Polyporales sp	99.47	KR015242
2404	2011	Wanang	Psychotria leptothyrsa	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.84	KR015243
2410	2011	Wanang	Psychotria leptothyrsa	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.83	KR015244
2411	2011	Wanang	Psychotria leptothyrsa	108	SH019814.07FU	unidentified	unidentified	fungal sp ARIZ B505	88.94	KR015245
2422	2011	Wanang	Psychotria micrococca	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.99	KR015247
2429	2011	Wanang	Psychotria micrococca	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.01	KR015248
2431	2011	Wanang	Psychotria micrococca	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.91	KR015250
2432	2011	Wanang	Psychotria micrococca	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.69	KR015251
2434	2011	Wanang	Psychotria micrococca	8	SH261145.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nupharicola	99.36	KR015252

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2435	2011	Wanang	Psychotria micrococca	40	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	92.96	KR015253
2436	2011	Wanang	Psychotria micrococca	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.48	KR015254
2437	2011	Wanang	Psychotria micrococca	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.38	KR015255
2438	2011	Wanang	Psychotria micrococca	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.02	KR015256
2445	2011	Wanang	Psychotria micrococca	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.83	KR015258
2454	2011	Wanang	Psychotria micrococca	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR015259
2455	2011	Wanang	Psychotria micrococca	94	SH211303.07FU	Halosphaeriaceae	unidentified	Halosphaeriaceae sp	97.59	KR015260
2456	2011	Wanang	Psychotria micrococca	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR015261
2462	2011	Wanang	Psychotria micrococca	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.99	KR015262
2463	2011	Wanang	Psychotria micrococca	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.3	KR015263
2465	2011	Wanang	Psychotria micrococca	8	SH375666.07FU	Glomerellaceae	Colletotrichum	Colletotrichum tropicicola	99.38	KR015264
2466	2011	Wanang	Psychotria micrococca	16	SH207303.07FU	Glomerellaceae	unidentified	Glomerellaceae sp	99.6	KR015265
2468	2011	Wanang	Psychotria micrococca	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.99	KR015266
2470	2011	Wanang	Psychotria micrococca	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.01	KR015268
2472	2011	Wanang	Psychotria micrococca	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97	KR015269
2475	2011	Wanang	Ficus variegata	32	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	92.56	KR015270
2477	2011	Wanang	Ficus variegata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.93	KR015271
2478	2011	Wanang	Ficus variegata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.89	KR015272
2479	2011	Wanang	Ficus variegata	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.65	KR015273
2480	2011	Wanang	Ficus variegata	40	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	92.83	KR015275
2481	2011	Wanang	Ficus variegata	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR015276
2482	2011	Wanang	Ficus variegata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97	KR015277
2483	2011	Wanang	Ficus variegata	44	SH176593.07FU	Xylariaceae	unidentified	Xylariaceae sp	99.79	KR015278
2484	2011	Wanang	Ficus variegata	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR015279
2485	2011	Wanang	Ficus variegata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97	KR015280
2493	2011	Wanang	Ficus variegata	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.83	KR015282
2498	2011	Wanang	Ficus variegata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.13	KR015283
2499	2011	Wanang	Ficus variegata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.99	KR015284
2500	2011	Wanang	Ficus variegata	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.65	KR015287
2502	2011	Wanang	Ficus variegata	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR015288
2503	2011	Wanang	Ficus variegata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.92	KR015289

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2508	2011	Wanang	Ficus variegata	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.48	KR015290
2509	2011	Wanang	Ficus variegata	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.83	KR015291
2511	2011	Wanang	Ficus variegata	32	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	92.77	KR015293
2512	2011	Wanang	Ficus variegata	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR015294
2515	2011	Wanang	Ficus variegata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.93	KR015295
2517	2011	Wanang	Ficus variegata	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR015296
2521	2011	Wanang	Ficus variegata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	98.15	KR015298
2527	2011	Wanang	Ficus variegata	79	SH181421.07FU	unidentified	unidentified	Pleosporales sp	98.35	KR015299
2528	2011	Wanang	Ficus variegata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.68	KR015300
2531	2011	Wanang	Ficus variegata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.88	KR015302
2535	2011	Wanang	Ficus hahliana	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.97	KR015303
2537	2011	Wanang	Ficus hahliana	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.04	KR015304
2546	2011	Wanang	Ficus hahliana	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.05	KR015306
2553	2011	Wanang	Ficus hahliana	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.98	KR015307
2554	2011	Wanang	Ficus hahliana	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR015308
2558	2011	Wanang	Ficus hahliana	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR015309
2566	2011	Wanang	Ficus hahliana	70	SH413545.07FU	Trichocomaceae	Talaromyces	Talaromyces ruber	99.4	KR015310
2588	2011	Wanang	Ficus hahliana	79	SH181421.07FU	unidentified	unidentified	Pleosporales sp	98.76	KR015313
2658	2011	Wanang	Macaranga bifoveata	213	SH211308.07FU	unidentified	unidentified	Sordariomycetes sp	91.8	KR015318
2675	2011	Wanang	Macaranga bifoveata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.07	KR015321
2678	2011	Wanang	Macaranga bifoveata	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.83	KR015322
2688	2011	Wanang	Macaranga bifoveata	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR015323
2689	2011	Wanang	Macaranga bifoveata	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR015324
2708	2011	Wanang	Macaranga bifoveata	40	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	93.01	KR015327
2719	2011	Wanang	Macaranga punctata	108	SH019814.07FU	unidentified	unidentified	fungal sp ARIZ B505	88.94	KR015328
2721	2011	Wanang	Macaranga punctata	41	SH187156.07FU	Xylariaceae	Hypoxylon	Hypoxylon investiens	99.11	KR015329
2725	2011	Wanang	Macaranga punctata	40	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	93.15	KR015330
2751	2011	Wanang	Macaranga punctata	212	SH196110.07FU	Cordycipitaceae	Simplicillium	Simplicillium lamellicola	99.24	KR015334
2754	2011	Wanang	Macaranga punctata	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR015335
2759	2011	Wanang	Macaranga punctata	32	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	92.63	KR015336
2789	2011	Wanang	Ficus variegata	162	SH193082.07FU	unidentified	unidentified	Ascomycota sp	100	KR015340

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2831	2011	Wanang	Ficus variegata	32	SH195008.07FU	Xylariaceae	Xylaria	Xylaria sp	97.97	KR015343
2834	2011	Wanang	Macaranga punctata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.09	KR015344
2837	2011	Wanang	Macaranga punctata	32	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	92.56	KR015345
2842	2011	Wanang	Macaranga punctata	13	SH198541.07FU	unidentified	unidentified	Polyporales sp	100	KR015347
2857	2011	Wanang	Macaranga punctata	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR015349
2923	2011	Wanang	Macaranga fallacina	44	SH176593.07FU	Xylariaceae	unidentified	Xylariaceae sp	100	KR015356
2966	2011	Wanang	Ficus pungens	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.37	KR015360
2969	2011	Wanang	Ficus pungens	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.01	KR015361
2978	2011	Wanang	Ficus pungens	95	SH217390.07FU	Xylariaceae	Xylaria	Xylaria sp	97.58	KR015363
3005	2011	Wanang	Ficus pungens	142	SH212868.07FU	unidentified	unidentified	Polyporales sp	99.82	KR015365
3010	2011	Wanang	Ficus pungens	42	SH014295.07FU	Xylariaceae	Muscodor	Muscodor sp GS3 3 4	94.43	KR015367
3105	2011	Wanang	Ficus hahliana	211	SH192452.07FU	Meruliaceae	unidentified	Meruliaceae sp	95.59	KR015373
3108	2011	Wanang	Ficus hahliana	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR015374
3133	2011	Wanang	Ficus hahliana	108	SH019814.07FU	unidentified	unidentified	fungal sp ARIZ B505	88.94	KR015376
3138	2011	Wanang	Syzygium longipes	210	SH207632.07FU	Fomitopsidaceae	Fomitopsis	Fomitopsis sp X1419	99.83	KR015377
3142	2011	Wanang	Syzygium longipes	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.35	KR015379
3146	2011	Wanang	Syzygium longipes	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.8	KR015380
3148	2011	Wanang	Syzygium longipes	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR015381
3151	2011	Wanang	Syzygium longipes	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR015383
3155	2011	Wanang	Syzygium longipes	209	SH187959.07FU	Polyporaceae	Lentinus	Lentinus sp AX170	98.83	KR015384
3160	2011	Wanang	Syzygium longipes	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.04	KR015386
3162	2011	Wanang	Syzygium longipes	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.06	KR015387
3163	2011	Wanang	Syzygium longipes	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.83	KR015388
3168	2011	Wanang	Syzygium longipes	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.03	KR015389
3171	2011	Wanang	Syzygium longipes	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.65	KR015391
3172	2011	Wanang	Syzygium longipes	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.36	KR015392
3177	2011	Wanang	Syzygium longipes	108	SH019813.07FU	Xylariaceae	Xylaria	Xylaria tuberoides	89.34	KR015393
3178	2011	Wanang	Syzygium longipes	40	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	92.96	KR015394
3179	2011	Wanang	Syzygium longipes	30	SH008783.07FU	Hymenochaetaceae	Inonotus	Inonotus pachyphloeus	100	KR015395
3181	2011	Wanang	Syzygium longipes	142	SH212868.07FU	unidentified	unidentified	Polyporales sp	99.82	KR015397
3183	2011	Wanang	Syzygium longipes	208	SH203414.07FU	Trichocomaceae	Aspergillus	Aspergillus piperis	99.8	KR015398

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3186	2011	Wanang	Syzygium longipes	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.83	KR015399
3187	2011	Wanang	Syzygium longipes	40	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	93.14	KR015400
3189	2011	Wanang	Syzygium longipes	32	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	92.73	KR015401
3196	2011	Wanang	Psychotria leptothyrsa	27	SH197058.07FU	Polyporaceae	Trametes	Trametes maxima	99.82	KR015403
3203	2011	Wanang	Psychotria leptothyrsa	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR015404
3204	2011	Wanang	Psychotria leptothyrsa	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.56	KR015405
3213	2011	Wanang	Psychotria leptothyrsa	142	SH212868.07FU	unidentified	unidentified	Polyporales sp	99.64	KR015407
3222	2011	Wanang	Psychotria leptothyrsa	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR015408
3228	2011	Wanang	Psychotria leptothyrsa	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR015409
3235	2011	Wanang	Psychotria leptothyrsa	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR015411
3237	2011	Wanang	Psychotria leptothyrsa	39	SH195051.07FU	Xylariaceae	Xylaria	Xylaria sp TI070914	99.8	KR015412
3238	2011	Wanang	Psychotria leptothyrsa	4	SH195663.07FU	Glomerellaceae	Colletotrichum	Colletotrichum sp IP 43	99.19	KR015413
3239	2011	Wanang	Psychotria leptothyrsa	207	SH211301.07FU	Halosphaeriaceae	unidentified	Halosphaeriaceae sp	90.89	KR015414
3240	2011	Wanang	Psychotria leptothyrsa	66	SH180176.07FU	Chaetomiaceae	Chaetomium	Chaetomium sp	99.79	KR015416
3242	2011	Wanang	Psychotria leptothyrsa	69	SH215896.07FU	unidentified	unidentified	Sordariomycetes sp	95.52	KR015417
3243	2011	Wanang	Psychotria leptothyrsa	8	SH261145.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nupharicola	99.18	KR015418
3245	2011	Wanang	Psychotria leptothyrsa	120	SH190987.07FU	Incertae_sedis	Wallrothiella	Wallrothiella subiculosa	99.59	KR015419
3249	2011	Wanang	Psychotria leptothyrsa	206	SH204932.07FU	Incertae_sedis	Resinicium	Resinicium friabile	98.22	KR015420
3262	2011	Wanang	Ficus variegata	5	SH190215.07FU	Trichocomaceae	Penicillium	Penicillium citrinum	100	KR015423
3275	2011	Wanang	Ficus variegata	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR015425
3299	2011	Wanang	Ficus variegata	40	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	92.85	KR015428
3304	2011	Wanang	Ficus variegata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.05	KR015431
3305	2011	Wanang	Ficus variegata	14	SH187148.07FU	Xylariaceae	Hypoxylon	Hypoxylon sp	98.41	KR015432
3307	2011	Wanang	Ficus variegata	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.65	KR015433
3308	2011	Wanang	Ficus variegata	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR015434
3309	2011	Wanang	Ficus variegata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.85	KR015435
3310	2011	Wanang	Ficus variegata	108	SH019814.07FU	unidentified	unidentified	fungal sp ARIZ B505	88.94	KR015437
3311	2011	Wanang	Ficus variegata	101	SH026230.07FU	unidentified	unidentified	Sordariomycetes sp	90.94	KR015438
3313	2011	Wanang	Ficus variegata	8	SH375666.07FU	Glomerellaceae	Colletotrichum	Colletotrichum tropicicola	99.18	KR015439
3317	2011	Wanang	Macaranga fallacina	29	SH192878.07FU	Hymenochaetaceae	Phellinus	Phellinus noxius	98.53	KR015440
3339	2011	Wanang	Macaranga fallacina	9	SH198965.07FU	unidentified	unidentified	Ascomycota sp	100	KR015441

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3340	2011	Wanang	Macaranga fallacina	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.65	KR015443
3341	2011	Wanang	Macaranga fallacina	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.07	KR015444
3342	2011	Wanang	Macaranga fallacina	73	SH194525.07FU	Mycosphaerellaceae	Zasmidium	Zasmidium sp	98.64	KR015445
3343	2011	Wanang	Macaranga fallacina	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.84	KR015446
3353	2011	Wanang	Macaranga fallacina	205	SH217390.07FU	Xylariaceae	Xylaria	Xylaria sp	91.47	KR015448
3354	2011	Wanang	Macaranga fallacina	40	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	92.82	KR015449
3355	2011	Wanang	Macaranga fallacina	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.87	KR015450
3364	2011	Wanang	Macaranga fallacina	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	98.42	KR015452
3365	2011	Wanang	Macaranga fallacina	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.65	KR015453
3370	2011	Wanang	Macaranga fallacina	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.88	KR015454
3372	2011	Wanang	Macaranga fallacina	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.06	KR015455
3378	2011	Wanang	Macaranga punctata	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR015456
3380	2011	Wanang	Macaranga punctata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.97	KR015457
3381	2011	Wanang	Macaranga punctata	40	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	93.06	KR015458
3382	2011	Wanang	Macaranga punctata	40	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	93.1	KR015459
3383	2011	Wanang	Macaranga punctata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.05	KR015460
3387	2011	Wanang	Macaranga punctata	120	SH190987.07FU	Incertae_sedis	Wallrothiella	Wallrothiella subiculosa	98.97	KR015461
3397	2011	Wanang	Macaranga punctata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.71	KR015463
3400	2011	Wanang	Macaranga punctata	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	98.9	KR015466
3402	2011	Wanang	Macaranga punctata	40	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	93.31	KR015467
3403	2011	Wanang	Macaranga punctata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.85	KR015468
3404	2011	Wanang	Macaranga punctata	40	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	93.13	KR015469
3405	2011	Wanang	Macaranga punctata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.07	KR015470
3409	2011	Wanang	Macaranga punctata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.05	KR015471
3410	2011	Wanang	Macaranga punctata	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.83	KR015473
3411	2011	Wanang	Macaranga punctata	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR015474
3412	2011	Wanang	Macaranga punctata	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR015475
3413	2011	Wanang	Macaranga punctata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.04	KR015476
3418	2011	Wanang	Macaranga punctata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.35	KR015477
3423	2011	Wanang	Macaranga punctata	108	SH019814.07FU	unidentified	unidentified	fungal sp ARIZ B505	88.94	KR015479
3469	2011	Wanang	Psychotria leptothyrsa	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.88	KR015481

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3487	2011	Wanang	Psychotria leptothyrsa	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR015483
3491	2011	Wanang	Psychotria leptothyrsa	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.83	KR015484
3494	2011	Wanang	Syzygium longipes	12	SH200163.07FU	Hyponectriaceae	Beltraniella	Beltraniella sp	98.48	KR015485
3494	2011	Wanang	Syzygium longipes	12	SH200163.07FU	Hyponectriaceae	Beltraniella	Beltraniella sp	96.32	KR015485
3495	2011	Wanang	Syzygium longipes	12	SH200168.07FU	unidentified	unidentified	Xylariales sp	97.43	KR015486
3496	2011	Wanang	Syzygium longipes	9	SH198965.07FU	unidentified	unidentified	Ascomycota sp	100	KR015487
3498	2011	Wanang	Syzygium longipes	8	SH375666.07FU	Glomerellaceae	Colletotrichum	Colletotrichum tropicicola	98.97	KR015488
3499	2011	Wanang	Syzygium longipes	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	98.38	KR015489
3500	2011	Wanang	Syzygium longipes	9	SH198965.07FU	unidentified	unidentified	Ascomycota sp	100	KR015490
3501	2011	Wanang	Syzygium longipes	9	SH198965.07FU	unidentified	unidentified	Ascomycota sp	100	KR015491
3502	2011	Wanang	Syzygium longipes	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR015492
3504	2011	Wanang	Syzygium longipes	131	SH215897.07FU	Incertae_sedis	Ophiognomonia	Ophiognomonia sp CBP23C	92.07	KR015493
3512	2011	Wanang	Syzygium longipes	83	SH017310.07FU	unidentified	unidentified	leaf litter ascomycete strain its269	87	KR015494
3513	2011	Wanang	Syzygium longipes	69	SH215896.07FU	unidentified	unidentified	Sordariomycetes sp	96.18	KR015495
3520	2011	Wanang	Syzygium longipes	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.06	KR015497
3524	2011	Wanang	Syzygium longipes	70	SH282916.07FU	Trichocomaceae	Talaromyces	Talaromyces amestolkiae	100	KR015498
3527	2011	Wanang	Syzygium longipes	70	SH413545.07FU	Trichocomaceae	Talaromyces	Talaromyces ruber	99.4	KR015499
3528	2011	Wanang	Syzygium longipes	8	SH261145.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nupharicola	99.38	KR015500
3529	2011	Wanang	Syzygium longipes	9	SH198965.07FU	unidentified	unidentified	Ascomycota sp	99.28	KR015501
3531	2011	Wanang	Syzygium longipes	8	SH251184.07FU	Glomerellaceae	Colletotrichum	Colletotrichum musae	98.97	KR015502
3532	2011	Wanang	Syzygium longipes	7	SH195657.07FU	Glomerellaceae	unidentified	Glomerellaceae sp	98.89	KR015503
3533	2011	Wanang	Syzygium longipes	204	SH192459.07FU	Meruliaceae	Phlebia	Phlebia acanthocystis	99.82	KR015504
3554	2011	Wanang	Syzygium longipes	8	SH195649.07FU	Glomerellaceae	Colletotrichum	Colletotrichum xanthorrhoeae	98.6	KR015505
3557	2011	Wanang	Syzygium longipes	70	SH282916.07FU	Trichocomaceae	Talaromyces	Talaromyces amestolkiae	100	KR015506
3562	2011	Wanang	Syzygium longipes	107	SH215895.07FU	unidentified	unidentified	Sordariomycetes sp	95.88	KR015508
3565	2011	Wanang	Syzygium longipes	9	SH198965.07FU	unidentified	unidentified	Ascomycota sp	99.82	KR015509
3567	2011	Wanang	Syzygium longipes	83	SH017310.07FU	unidentified	unidentified	leaf litter ascomycete strain its269	87	KR015510
3570	2011	Wanang	Syzygium longipes	9	SH198965.07FU	unidentified	unidentified	Ascomycota sp	100	KR015511
3573	2011	Wanang	Syzygium longipes	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.99	KR015512
3578	2011	Wanang	Syzygium longipes	203	SH192710.07FU	Xylariaceae	Virgaria	Virgaria sp	92.81	KR015513
3584	2011	Wanang	Syzygium longipes	12	SH200163.07FU	Hyponectriaceae	Beltraniella	Beltraniella sp	98.48	KR015514

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3584	2011	Wanang	Syzygium longipes	12	SH200163.07FU	Hyponectriaceae	Beltraniella	Beltraniella sp	96.32	KR015514
3585	2011	Wanang	Syzygium longipes	8	SH375666.07FU	Glomerellaceae	Colletotrichum	Colletotrichum tropicicola	99.18	KR015515
3587	2011	Wanang	Syzygium longipes	83	SH017310.07FU	unidentified	unidentified	leaf litter ascomycete strain its269	88.11	KR015516
3588	2011	Wanang	Syzygium longipes	8	SH375666.07FU	Glomerellaceae	Colletotrichum	Colletotrichum tropicicola	99.17	KR015517
3589	2011	Wanang	Syzygium longipes	57	SH216142.07FU	Magnaporthaceae	Mycoleptodiscus	Mycoleptodiscus sp	100	KR015518
3590	2011	Wanang	Syzygium longipes	9	SH198965.07FU	unidentified	unidentified	Ascomycota sp	99.82	KR015520
3592	2011	Wanang	Syzygium longipes	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.09	KR015521
3593	2011	Wanang	Syzygium longipes	57	SH216142.07FU	Magnaporthaceae	Mycoleptodiscus	Mycoleptodiscus sp	100	KR015522
3594	2011	Wanang	Syzygium longipes	57	SH216142.07FU	Magnaporthaceae	Mycoleptodiscus	Mycoleptodiscus sp	100	KR015523
3595	2011	Wanang	Syzygium longipes	95	SH217390.07FU	Xylariaceae	Xylaria	Xylaria sp	97.98	KR015524
3596	2011	Wanang	Syzygium longipes	71	SH215896.07FU	unidentified	unidentified	Sordariomycetes sp	98.67	KR015525
3597	2011	Wanang	Syzygium longipes	4	SH195663.07FU	Glomerellaceae	Colletotrichum	Colletotrichum sp IP 43	99.19	KR015526
3598	2011	Wanang	Syzygium longipes	8	SH261145.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nupharicola	99.38	KR015527
3601	2011	Wanang	Syzygium longipes	12	SH200168.07FU	unidentified	unidentified	Xylariales sp	97.83	KR015530
3602	2011	Wanang	Syzygium longipes	8	SH195649.07FU	Glomerellaceae	Colletotrichum	Colletotrichum xanthorrhoeae	98.6	KR015531
3605	2011	Wanang	Syzygium longipes	202	SH189882.07FU	Glomerellaceae	Colletotrichum	Colletotrichum sp JK122	98.62	KR015532
3609	2011	Wanang	Syzygium longipes	12	SH200163.07FU	Hyponectriaceae	Beltraniella	Beltraniella sp	96.74	KR015533
3612	2011	Wanang	Syzygium longipes	66	SH180176.07FU	Chaetomiaceae	Chaetomium	Chaetomium sp	99.79	KR015535
3613	2011	Wanang	Syzygium longipes	201	SH201325.07FU	unidentified	unidentified	Pleosporales sp	95.97	KR015536
3614	2011	Wanang	Psychotria micrococca	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.83	KR015537
3615	2011	Wanang	Psychotria micrococca	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.77	KR015538
3617	2011	Wanang	Psychotria micrococca	8	SH195649.07FU	Glomerellaceae	Colletotrichum	Colletotrichum xanthorrhoeae	98.59	KR015539
3618	2011	Wanang	Psychotria micrococca	18	SH195462.07FU	Botryosphaeriaceae	Endomelanconiopsis	Endomelanconiopsis endophytica	100	KR015540
3620	2011	Wanang	Psychotria micrococca	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR015541
3621	2011	Wanang	Psychotria micrococca	48	SH187150.07FU	Xylariaceae	Hypoxylon	Hypoxylon sp LC06	98	KR015542
3623	2011	Wanang	Psychotria micrococca	8	SH261145.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nupharicola	99.18	KR015543
3625	2011	Wanang	Psychotria micrococca	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.21	KR015544
3635	2011	Wanang	Psychotria micrococca	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	98.03	KR015546
3636	2011	Wanang	Psychotria micrococca	68	SH205619.07FU	Amphisphaeriaceae	Pestalotiopsis	Pestalotiopsis sp	99.8	KR015547
3640	2011	Wanang	Psychotria micrococca	66	SH180176.07FU	Chaetomiaceae	Chaetomium	Chaetomium sp	99.76	KR015548
3641	2011	Wanang	Psychotria micrococca	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR015549

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3650	2011	Wanang	Psychotria micrococca	8	SH375666.07FU	Glomerellaceae	Colletotrichum	Colletotrichum tropicicola	98.97	KR015550
3660	2011	Wanang	Psychotria micrococca	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.62	KR015551
3662	2011	Wanang	Psychotria micrococca	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.7	KR015552
3670	2011	Wanang	Psychotria micrococca	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.83	KR015554
3672	2011	Wanang	Psychotria micrococca	8	SH261145.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nupharicola	99.38	KR015555
3673	2011	Wanang	Psychotria micrococca	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR015556
3674	2011	Wanang	Psychotria micrococca	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR015557
3676	2011	Wanang	Psychotria micrococca	8	SH375666.07FU	Glomerellaceae	Colletotrichum	Colletotrichum tropicicola	99.18	KR015558
3677	2011	Wanang	Psychotria micrococca	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR015559
3678	2011	Wanang	Psychotria micrococca	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR015560
3679	2011	Wanang	Psychotria micrococca	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.63	KR015561
3680	2011	Wanang	Psychotria micrococca	8	SH375666.07FU	Glomerellaceae	Colletotrichum	Colletotrichum tropicicola	99.18	KR015563
3681	2011	Wanang	Psychotria micrococca	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	98.78	KR015564
3683	2011	Wanang	Psychotria micrococca	8	SH251184.07FU	Glomerellaceae	Colletotrichum	Colletotrichum musae	99.18	KR015565
3684	2011	Wanang	Psychotria micrococca	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR015566
3685	2011	Wanang	Psychotria micrococca	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.48	KR015567
3686	2011	Wanang	Psychotria micrococca	200	SH215558.07FU	unidentified	unidentified	Fungi sp	98.45	KR015568
3687	2011	Wanang	Psychotria micrococca	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.83	KR015569
3689	2011	Wanang	Psychotria micrococca	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.82	KR015570
3691	2011	Wanang	Psychotria micrococca	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.38	KR015572
3692	2011	Wanang	Psychotria micrococca	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.89	KR015573
3693	2011	Wanang	Psychotria micrococca	199	SH289900.07FU	Botryosphaeriaceae	Pseudofusicoccum	Pseudofusicoccum adansoniae	99.02	KR015574
3694	2011	Wanang	Psychotria micrococca	4	SH195663.07FU	Glomerellaceae	Colletotrichum	Colletotrichum sp IP 43	98.36	KR015575
3695	2011	Wanang	Psychotria micrococca	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.47	KR015576
3696	2011	Wanang	Psychotria micrococca	8	SH261145.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nupharicola	98.97	KR015577
3699	2011	Wanang	Psychotria micrococca	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR015578
3701	2011	Wanang	Psychotria micrococca	8	SH261145.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nupharicola	99.35	KR015579
3703	2011	Wanang	Psychotria micrococca	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.9	KR015580
3705	2011	Wanang	Psychotria micrococca	9	SH198965.07FU	unidentified	unidentified	Ascomycota sp	100	KR015581
3707	2011	Wanang	Psychotria micrococca	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.81	KR015582
3711	2011	Wanang	Psychotria micrococca	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR015583

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3712	2011	Wanang	Psychotria micrococca	8	SH261145.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nupharicola	99.38	KR015584
3714	2011	Wanang	Psychotria micrococca	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	98.51	KR015585
3715	2011	Wanang	Psychotria micrococca	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.69	KR015586
3716	2011	Wanang	Psychotria micrococca	8	SH261145.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nupharicola	99.38	KR015587
3718	2011	Wanang	Psychotria micrococca	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.71	KR015588
3719	2011	Wanang	Psychotria micrococca	8	SH375666.07FU	Glomerellaceae	Colletotrichum	Colletotrichum tropicicola	99.18	KR015589
3720	2011	Wanang	Psychotria micrococca	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.87	KR015590
3721	2011	Wanang	Psychotria micrococca	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR015591
3722	2011	Wanang	Psychotria micrococca	8	SH261145.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nupharicola	99.38	KR015592
3723	2011	Wanang	Psychotria micrococca	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.83	KR015593
3724	2011	Wanang	Psychotria micrococca	4	SH195663.07FU	Glomerellaceae	Colletotrichum	Colletotrichum sp IP 43	99.39	KR015594
3725	2011	Wanang	Psychotria micrococca	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.83	KR015595
3727	2011	Wanang	Psychotria micrococca	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.18	KR015596
3730	2011	Wanang	Psychotria micrococca	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	98.08	KR015598
3731	2011	Wanang	Psychotria micrococca	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.64	KR015599
3732	2011	Wanang	Psychotria micrococca	8	SH261145.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nupharicola	99.38	KR015600
3733	2011	Wanang	Psychotria micrococca	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.57	KR015601
3741	2011	Ohu	Psychotria micrococca	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.58	KR015603
3742	2011	Ohu	Psychotria micrococca	8	SH195649.07FU	Glomerellaceae	Colletotrichum	Colletotrichum xanthorrhoeae	98.6	KR015604
3747	2011	Ohu	Psychotria micrococca	94	SH211303.07FU	Halosphaeriaceae	unidentified	Halosphaeriaceae sp	98.2	KR015605
3750	2011	Ohu	Psychotria micrococca	95	SH217390.07FU	Xylariaceae	Xylaria	Xylaria sp	97.39	KR015606
3754	2011	Ohu	Psychotria micrococca	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.21	KR015607
3755	2011	Ohu	Psychotria micrococca	8	SH261145.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nupharicola	99.36	KR015608
3756	2011	Ohu	Psychotria micrococca	198	SH211064.07FU	Microthyriaceae	unidentified	Microthyriaceae sp	100	KR015609
3757	2011	Ohu	Psychotria micrococca	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.62	KR015610
3758	2011	Ohu	Psychotria micrococca	8	SH261145.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nupharicola	99.38	KR015611
3760	2011	Ohu	Psychotria micrococca	197	SH022540.07FU	unidentified	unidentified	Sordariomycetes sp	92.18	KR015613
3761	2011	Ohu	Psychotria micrococca	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.64	KR015614
3763	2011	Ohu	Psychotria micrococca	157	SH025295.07FU	unidentified	unidentified	Microascales sp	94.75	KR015615
3764	2011	Ohu	Psychotria micrococca	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.65	KR015616
3765	2011	Ohu	Psychotria micrococca	8	SH375666.07FU	Glomerellaceae	Colletotrichum	Colletotrichum tropicicola	98.97	KR015617

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3770	2011	Ohu	Psychotria micrococca	8	SH195649.07FU	Glomerellaceae	Colletotrichum	Colletotrichum xanthorrhoeae	98.59	KR015618
3774	2011	Ohu	Psychotria micrococca	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.83	KR015619
3779	2011	Ohu	Psychotria micrococca	71	SH215895.07FU	unidentified	unidentified	Sordariomycetes sp	98	KR015620
3781	2011	Ohu	Psychotria micrococca	196	SH195675.07FU	Glomerellaceae	Colletotrichum	Colletotrichum sp 3393	99.38	KR015621
3782	2011	Ohu	Psychotria micrococca	8	SH375666.07FU	Glomerellaceae	Colletotrichum	Colletotrichum tropicicola	99.18	KR015622
3783	2011	Ohu	Psychotria micrococca	8	SH375666.07FU	Glomerellaceae	Colletotrichum	Colletotrichum tropicicola	99.18	KR015623
3785	2011	Ohu	Psychotria micrococca	8	SH375666.07FU	Glomerellaceae	Colletotrichum	Colletotrichum tropicicola	99.18	KR015624
3788	2011	Ohu	Psychotria micrococca	8	SH195649.07FU	Glomerellaceae	Colletotrichum	Colletotrichum xanthorrhoeae	98.6	KR015625
3791	2011	Ohu	Psychotria micrococca	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	97.18	KR015626
3792	2011	Ohu	Psychotria micrococca	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	97.09	KR015627
3796	2011	Ohu	Psychotria micrococca	8	SH261145.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nupharicola	99.76	KR015628
3797	2011	Ohu	Psychotria micrococca	8	SH261145.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nupharicola	99.38	KR015629
3799	2011	Ohu	Psychotria micrococca	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR015630
3801	2011	Ohu	Psychotria micrococca	9	SH198965.07FU	unidentified	unidentified	Ascomycota sp	100	KR015631
3802	2011	Ohu	Psychotria micrococca	68	SH205618.07FU	Amphisphaeriaceae	Pestalotiopsis	Pestalotiopsis sp	99.8	KR015632
3803	2011	Ohu	Psychotria micrococca	1	SH408631.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nymphaeae	99.21	KR015633
3804	2011	Ohu	Psychotria micrococca	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.83	KR015634
3805	2011	Ohu	Psychotria micrococca	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.12	KR015635
3806	2011	Ohu	Psychotria micrococca	108	SH019813.07FU	Xylariaceae	Xylaria	Xylaria tuberoides	90.49	KR015636
3811	2011	Ohu	Psychotria micrococca	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.81	KR015637
3824	2011	Ohu	Psychotria micrococca	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.11	KR015638
3825	2011	Ohu	Psychotria micrococca	68	SH205618.07FU	Amphisphaeriaceae	Pestalotiopsis	Pestalotiopsis sp	100	KR015639
3833	2011	Ohu	Psychotria micrococca	27	SH197058.07FU	Polyporaceae	Trametes	Trametes maxima	99.82	KR015641
3835	2011	Ohu	Psychotria micrococca	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.81	KR015642
3845	2011	Ohu	Psychotria micrococca	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.14	KR015643
3846	2011	Ohu	Psychotria micrococca	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.82	KR015644
3848	2011	Ohu	Psychotria micrococca	195	SH192711.07FU	Xylariaceae	Virgaria	Virgaria nigra	95.67	KR015645
3849	2011	Ohu	Psychotria micrococca	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR015646
3863	2011	Ohu	Psychotria micrococca	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.05	KR015647
3878	2011	Ohu	Psychotria micrococca	8	SH261145.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nupharicola	99.18	KR015649
3882	2011	Ohu	Psychotria micrococca	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR015650

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3883	2011	Ohu	Psychotria micrococca	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.68	KR015651
3884	2011	Ohu	Psychotria micrococca	40	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	92.91	KR015652
3887	2011	Ohu	Psychotria micrococca	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.8	KR015653
3888	2011	Ohu	Psychotria micrococca	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.07	KR015654
3890	2011	Ohu	Psychotria micrococca	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR015655
3891	2011	Ohu	Psychotria micrococca	8	SH195649.07FU	Glomerellaceae	Colletotrichum	Colletotrichum xanthorrhoeae	98.6	KR015656
3894	2011	Ohu	Psychotria micrococca	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	98.36	KR015657
3895	2011	Ohu	Psychotria micrococca	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.83	KR015658
3896	2011	Ohu	Psychotria micrococca	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.47	KR015659
3897	2011	Ohu	Psychotria micrococca	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.99	KR015660
3898	2011	Ohu	Psychotria micrococca	8	SH261145.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nupharicola	99.18	KR015661
3899	2011	Ohu	Psychotria micrococca	8	SH261145.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nupharicola	99.18	KR015662
3900	2011	Ohu	Psychotria micrococca	8	SH261145.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nupharicola	99.18	KR015665
3901	2011	Ohu	Psychotria micrococca	8	SH261145.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nupharicola	99.18	KR015666
3902	2011	Ohu	Psychotria micrococca	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.81	KR015667
3904	2011	Ohu	Psychotria micrococca	9	SH198965.07FU	unidentified	unidentified	Ascomycota sp	100	KR015668
3905	2011	Ohu	Psychotria micrococca	8	SH261145.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nupharicola	99.18	KR015669
3906	2011	Ohu	Psychotria micrococca	8	SH261145.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nupharicola	99.18	KR015670
3907	2011	Ohu	Psychotria micrococca	8	SH261145.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nupharicola	99.18	KR015671
3916	2011	Ohu	Psychotria micrococca	8	SH261145.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nupharicola	99.18	KR015672
3918	2011	Ohu	Psychotria micrococca	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.51	KR015673
3925	2011	Ohu	Ficus variegata	194	SH206780.07FU	Mycosphaerellaceae	Mycosphaerella	Mycosphaerella etlingerae	94.83	KR015674
3930	2011	Ohu	Ficus variegata	32	SH195008.07FU	Xylariaceae	Xylaria	Xylaria sp	97.8	KR015675
3947	2011	Ohu	Ficus variegata	130	SH206774.07FU	Mycosphaerellaceae	Pseudocercospora	Pseudocercospora araliae	98.89	KR015676
3948	2011	Ohu	Ficus variegata	9	SH198965.07FU	unidentified	unidentified	Ascomycota sp	100	KR015677
3954	2011	Ohu	Ficus variegata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	98.47	KR015679
3957	2011	Ohu	Ficus variegata	9	SH198965.07FU	unidentified	unidentified	Ascomycota sp	99.82	KR015680
3959	2011	Ohu	Ficus variegata	9	SH198965.07FU	unidentified	unidentified	Ascomycota sp	100	KR015681
3960	2011	Ohu	Ficus variegata	9	SH198965.07FU	unidentified	unidentified	Ascomycota sp	100	KR015682
3962	2011	Ohu	Ficus variegata	66	SH180176.07FU	Chaetomiaceae	Chaetomium	Chaetomium sp	99.79	KR015683
3963	2011	Ohu	Ficus variegata	9	SH198965.07FU	unidentified	unidentified	Ascomycota sp	99.82	KR015684

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3965	2011	Ohu	Ficus variegata	172	SH211177.07FU	unidentified	unidentified	Ascomycota sp	99.01	KR015685
3967	2011	Ohu	Ficus variegata	9	SH198965.07FU	unidentified	unidentified	Ascomycota sp	100	KR015686
3969	2011	Ohu	Ficus variegata	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR015687
3988	2011	Ohu	Macaranga punctata	94	SH211302.07FU	Halosphaeriaceae	unidentified	Halosphaeriaceae sp	98.06	KR015689
3990	2011	Ohu	Macaranga punctata	193	SH217236.07FU	Xylariaceae	Hypoxylon	Hypoxylon polyporus	99.48	KR015690
3993	2011	Ohu	Macaranga punctata	32	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	92.36	KR015691
3996	2011	Ohu	Macaranga punctata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.57	KR015692
4001	2011	Ohu	Macaranga punctata	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR015696
4003	2011	Ohu	Macaranga punctata	94	SH211305.07FU	Halosphaeriaceae	unidentified	Halosphaeriaceae sp	96.74	KR015697
4005	2011	Ohu	Macaranga punctata	32	SH195008.07FU	Xylariaceae	Xylaria	Xylaria sp	97.97	KR015698
4006	2011	Ohu	Macaranga punctata	19	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	91.19	KR015699
4009	2011	Ohu	Macaranga punctata	192	SH215896.07FU	unidentified	unidentified	Sordariomycetes sp	93.95	KR015700
4010	2011	Ohu	Macaranga punctata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.09	KR015701
4012	2011	Ohu	Macaranga punctata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.01	KR015702
4014	2011	Ohu	Macaranga punctata	8	SH375666.07FU	Glomerellaceae	Colletotrichum	Colletotrichum tropicicola	98.97	KR015703
4016	2011	Ohu	Macaranga punctata	19	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	91.14	KR015704
4019	2011	Ohu	Macaranga punctata	8	SH375666.07FU	Glomerellaceae	Colletotrichum	Colletotrichum tropicicola	98.97	KR015705
4020	2011	Ohu	Macaranga punctata	8	SH375666.07FU	Glomerellaceae	Colletotrichum	Colletotrichum tropicicola	99.18	KR015706
4022	2011	Ohu	Macaranga punctata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.69	KR015707
4023	2011	Ohu	Macaranga punctata	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR015708
4024	2011	Ohu	Macaranga punctata	32	SH195008.07FU	Xylariaceae	Xylaria	Xylaria sp	97.97	KR015709
4027	2011	Ohu	Macaranga punctata	8	SH195649.07FU	Glomerellaceae	Colletotrichum	Colletotrichum xanthorrhoeae	98.77	KR015710
4028	2011	Ohu	Macaranga punctata	8	SH375666.07FU	Glomerellaceae	Colletotrichum	Colletotrichum tropicicola	98.97	KR015711
4029	2011	Ohu	Macaranga punctata	181	SH185165.07FU	unidentified	unidentified	Polyporales sp	100	KR015712
4030	2011	Ohu	Macaranga punctata	8	SH375666.07FU	Glomerellaceae	Colletotrichum	Colletotrichum tropicicola	99.18	KR015713
4034	2011	Ohu	Macaranga punctata	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR015714
4035	2011	Ohu	Macaranga punctata	9	SH198965.07FU	unidentified	unidentified	Ascomycota sp	100	KR015715
4036	2011	Ohu	Macaranga punctata	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR015716
4038	2011	Ohu	Macaranga punctata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.7	KR015717
4040	2011	Ohu	Macaranga punctata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.14	KR015719
4056	2011	Ohu	Macaranga punctata	37	SH190217.07FU	Trichocomaceae	Penicillium	Penicillium sumatrense	99.02	KR015720

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4074	2011	Ohu	Macaranga punctata	15	SH127902.07FU	Davidiellaceae	Cladosporium	Cladosporium halotolerans	99.16	KR015721
4107	2011	Ohu	Macaranga punctata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97	KR015724
4111	2011	Ohu	Macaranga punctata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97	KR015725
4115	2011	Ohu	Macaranga punctata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.53	KR015726
4135	2011	Ohu	Macaranga punctata	191	SH182491.07FU	Trichocomaceae	Aspergillus	Aspergillus caesiellus	100	KR015727
4143	2011	Ohu	Macaranga punctata	190	SH193464.07FU	Microascaceae	Scopulariopsis	Scopulariopsis sp A 4 1	85.76	KR015728
4151	2011	Ohu	Macaranga punctata	32	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	92.42	KR015729
4153	2011	Ohu	Macaranga punctata	136	SH214931.07FU	Togniniaceae	Phaeoacremonium	Phaeoacremonium rubrigenum	88.92	KR015730
4160	2011	Ohu	Macaranga punctata	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.82	KR015731
4169	2011	Ohu	Ficus hahliana	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.44	KR015732
4170	2011	Ohu	Ficus hahliana	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.89	KR015734
4171	2011	Ohu	Ficus hahliana	138	SH025302.07FU	unidentified	unidentified	Microascales sp	93.79	KR015735
4174	2011	Ohu	Ficus hahliana	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.31	KR015736
4179	2011	Ohu	Ficus hahliana	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.83	KR015737
4182	2011	Ohu	Ficus hahliana	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.83	KR015739
4202	2011	Ohu	Ficus hahliana	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR015740
4211	2011	Ohu	Ficus hahliana	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR015741
4216	2011	Ohu	Ficus hahliana	40	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	92.82	KR015742
4239	2011	Ohu	Ficus pungens	40	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	92.72	KR015743
4249	2011	Ohu	Ficus pungens	185	SH194610.07FU	Trichocomaceae	Penicillium	Penicillium paxilli	99.8	KR015745
4251	2011	Ohu	Ficus pungens	32	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	92.48	KR015747
4253	2011	Ohu	Ficus pungens	17	SH193088.07FU	Incertae_sedis	Geosmithia	Geosmithia sp 2 FR 2014	98.02	KR015748
4256	2011	Ohu	Ficus pungens	41	SH187156.07FU	Xylariaceae	Hypoxylon	Hypoxylon investiens	99.11	KR015749
4257	2011	Ohu	Ficus pungens	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	98.31	KR015750
4258	2011	Ohu	Ficus pungens	189	SH194039.07FU	unidentified	unidentified	Hypocreales sp	99.8	KR015751
4265	2011	Ohu	Ficus pungens	181	SH185165.07FU	unidentified	unidentified	Polyporales sp	100	KR015752
4267	2011	Ohu	Ficus pungens	32	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	92.44	KR015753
4269	2011	Ohu	Ficus pungens	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.9	KR015754
4271	2011	Ohu	Ficus pungens	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.83	KR015755
4272	2011	Ohu	Ficus pungens	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.38	KR015756
4280	2011	Ohu	Ficus pungens	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.73	KR015757

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4281	2011	Ohu	Ficus variegata	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.48	KR015758
4282	2011	Ohu	Ficus variegata	32	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	92.43	KR015759
4290	2011	Ohu	Ficus variegata	175	SH406222.07FU	Mycosphaerellaceae	Pseudocercospora	Pseudocercospora corylopsidis	99.56	KR015760
4296	2011	Ohu	Ficus variegata	181	SH185165.07FU	unidentified	unidentified	Polyporales sp	99.82	KR015761
4297	2011	Ohu	Ficus variegata	181	SH185165.07FU	unidentified	unidentified	Polyporales sp	100	KR015762
4302	2011	Ohu	Ficus variegata	9	SH198965.07FU	unidentified	unidentified	Ascomycota sp	100	KR015765
4317	2011	Ohu	Ficus variegata	8	SH261145.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nupharicola	99.38	KR015766
4330	2011	Ohu	Ficus variegata	188	SH221522.07FU	Incertae_sedis	unidentified	Ascomycota sp	95.58	KR015767
4332	2011	Ohu	Ficus variegata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	98.23	KR015768
4333	2011	Ohu	Ficus variegata	40	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	93.11	KR015769
4339	2011	Ohu	Ficus variegata	187	SH212569.07FU	unidentified	unidentified	Sordariomycetes sp	99.19	KR015770
4341	2011	Ohu	Ficus variegata	186	SH221124.07FU	Xylariaceae	Xylaria	Xylaria sp XF4	98.21	KR015771
4359	2011	Ohu	Ficus variegata	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR015773
4362	2011	Ohu	Ficus variegata	185	SH194610.07FU	Trichocomaceae	Penicillium	Penicillium paxilli	99.8	KR015774
4365	2011	Ohu	Ficus variegata	32	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	92.49	KR015775
4366	2011	Ohu	Ficus variegata	32	SH195008.07FU	Xylariaceae	Xylaria	Xylaria sp	97.8	KR015776
4367	2011	Ohu	Ficus variegata	32	SH195008.07FU	Xylariaceae	Xylaria	Xylaria sp	97.98	KR015777
4372	2011	Ohu	Ficus variegata	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR015779
4382	2011	Ohu	Ficus variegata	184	SH014243.07FU	Mycosphaerellaceae	Ramichloridium	Ramichloridium strelitziae	96.71	KR015781
4384	2011	Ohu	Ficus variegata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.85	KR015782
4385	2011	Ohu	Ficus variegata	183	SH206780.07FU	Mycosphaerellaceae	Mycosphaerella	Mycosphaerella etlingerae	100	KR015783
4387	2011	Ohu	Ficus variegata	94	SH025303.07FU	unidentified	unidentified	Microascales sp	97.24	KR015784
4388	2011	Ohu	Ficus variegata	182	SH175219.07FU	Psathyrellaceae	Coprinellus	Coprinellus hiascens	96.97	KR015785
4409	2011	Ohu	Psychotria leptothyrsa	67	SH193471.07FU	unidentified	unidentified	Sordariomycetes sp	89.57	KR015786
4425	2011	Ohu	Psychotria leptothyrsa	5	SH190215.07FU	Trichocomaceae	Penicillium	Penicillium citrinum	100	KR015787
4426	2011	Ohu	Psychotria leptothyrsa	67	SH193464.07FU	Microascaceae	Scopulariopsis	Scopulariopsis sp A 4 1	88.24	KR015788
4430	2011	Ohu	Psychotria leptothyrsa	8	SH261145.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nupharicola	99.38	KR015790
4450	2011	Ohu	Psychotria leptothyrsa	8	SH375666.07FU	Glomerellaceae	Colletotrichum	Colletotrichum tropicicola	99.18	KR015791
4455	2011	Ohu	Psychotria leptothyrsa	9	SH198965.07FU	unidentified	unidentified	Ascomycota sp	100	KR015792
4462	2011	Ohu	Psychotria leptothyrsa	29	SH192878.07FU	Hymenochaetaceae	Phellinus	Phellinus noxius	98.08	KR015793
4469	2011	Ohu	Psychotria leptothyrsa	108	SH019813.07FU	Xylariaceae	Xylaria	Xylaria tuberoides	89.34	KR015794

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4470	2011	Ohu	Psychotria leptothyrsa	181	SH185165.07FU	unidentified	unidentified	Polyporales sp	100	KR015795
4479	2011	Ohu	Psychotria leptothyrsa	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR015796
4486	2011	Ohu	Psychotria leptothyrsa	155	SH199845.07FU	unidentified	unidentified	Polyporales sp	99.64	KR015797
4491	2011	Ohu	Psychotria leptothyrsa	15	SH127904.07FU	Davidiellaceae	Cladosporium	Cladosporium dominicanum	100	KR015798
4492	2011	Ohu	Psychotria leptothyrsa	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.52	KR015799
4493	2011	Ohu	Psychotria leptothyrsa	32	SH195008.07FU	Xylariaceae	Xylaria	Xylaria sp	97.8	KR015800
4496	2011	Ohu	Psychotria leptothyrsa	32	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	92.44	KR015801
4497	2011	Ohu	Psychotria leptothyrsa	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR015802
4498	2011	Ohu	Psychotria leptothyrsa	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.93	KR015803
4501	2011	Ohu	Psychotria leptothyrsa	8	SH375666.07FU	Glomerellaceae	Colletotrichum	Colletotrichum tropicicola	99.18	KR015806
4506	2011	Ohu	Psychotria leptothyrsa	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.02	KR015807
4512	2011	Ohu	Psychotria leptothyrsa	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.83	KR015808
4521	2011	Ohu	Syzygium longipes	130	SH206774.07FU	Mycosphaerellaceae	Pseudocercospora	Pseudocercospora araliae	99.34	KR015809
4526	2011	Ohu	Syzygium longipes	8	SH375666.07FU	Glomerellaceae	Colletotrichum	Colletotrichum tropicicola	99.18	KR015810
4528	2011	Ohu	Syzygium longipes	181	SH185165.07FU	unidentified	unidentified	Polyporales sp	99.82	KR015811
4530	2011	Ohu	Syzygium longipes	8	SH375666.07FU	Glomerellaceae	Colletotrichum	Colletotrichum tropicicola	99.18	KR015813
4555	2011	Ohu	Syzygium longipes	9	SH198965.07FU	unidentified	unidentified	Ascomycota sp	100	KR015814
4557	2011	Ohu	Syzygium longipes	29	SH192878.07FU	Hymenochaetaceae	Phellinus	Phellinus noxius	97.87	KR015815
4560	2011	Ohu	Syzygium longipes	131	SH215898.07FU	Glomerellaceae	Colletotrichum	Colletotrichum sp	92.79	KR015816
4561	2011	Ohu	Syzygium longipes	108	SH019813.07FU	Xylariaceae	Xylaria	Xylaria tuberoides	89.34	KR015817
4566	2011	Ohu	Syzygium longipes	42	SH195934.07FU	Xylariaceae	Muscodor	Muscodor sp	100	KR015818
4567	2011	Ohu	Syzygium longipes	41	SH187156.07FU	Xylariaceae	Hypoxylon	Hypoxylon investiens	99.29	KR015819
4569	2011	Ohu	Syzygium longipes	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.68	KR015820
4570	2011	Ohu	Syzygium longipes	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.7	KR015822
4573	2011	Ohu	Syzygium longipes	40	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	92.81	KR015823
4580	2011	Ohu	Syzygium longipes	9	SH198965.07FU	unidentified	unidentified	Ascomycota sp	99.82	KR015824
4581	2011	Ohu	Psychotria leptothyrsa	15	SH127904.07FU	Davidiellaceae	Cladosporium	Cladosporium dominicanum	100	KR015825
4582	2011	Ohu	Psychotria leptothyrsa	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.1	KR015826
4583	2011	Ohu	Psychotria leptothyrsa	180	SH204569.07FU	Incertae_sedis	Dactylaria	Dactylaria higginsii	87.6	KR015827
4584	2011	Ohu	Psychotria leptothyrsa	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.29	KR015828
4588	2011	Ohu	Psychotria leptothyrsa	19	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	90.92	KR015829

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4600	2011	Ohu	Psychotria leptothyrsa	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.27	KR015832
4614	2011	Ohu	Psychotria leptothyrsa	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.83	KR015834
4634	2011	Ohu	Psychotria leptothyrsa	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.83	KR015836
4643	2011	Ohu	Syzygium longipes	108	SH019814.07FU	unidentified	unidentified	fungal sp ARIZ B505	88.94	KR015837
4646	2011	Ohu	Syzygium longipes	15	SH127904.07FU	Davidiellaceae	Cladosporium	Cladosporium dominicanum	100	KR015838
4649	2011	Ohu	Syzygium longipes	70	SH282916.07FU	Trichocomaceae	Talaromyces	Talaromyces amestolkiae	100	KR015839
4653	2011	Ohu	Syzygium longipes	9	SH198965.07FU	unidentified	unidentified	Ascomycota sp	100	KR015841
4658	2011	Ohu	Syzygium longipes	9	SH198965.07FU	unidentified	unidentified	Ascomycota sp	99.82	KR015842
4659	2011	Ohu	Syzygium longipes	5	SH190215.07FU	Trichocomaceae	Penicillium	Penicillium citrinum	100	KR015843
4660	2011	Ohu	Syzygium longipes	12	SH200163.07FU	Hyponectriaceae	Beltraniella	Beltraniella sp	96.32	KR015845
4660	2011	Ohu	Syzygium longipes	12	SH200163.07FU	Hyponectriaceae	Beltraniella	Beltraniella sp	98.48	KR015845
4671	2011	Ohu	Syzygium longipes	5	SH190215.07FU	Trichocomaceae	Penicillium	Penicillium citrinum	100	KR015846
4673	2011	Ohu	Syzygium longipes	66	SH180176.07FU	Chaetomiaceae	Chaetomium	Chaetomium sp	99.79	KR015847
4677	2011	Ohu	Syzygium longipes	69	SH215896.07FU	unidentified	unidentified	Sordariomycetes sp	95.53	KR015848
4678	2011	Ohu	Syzygium longipes	4	SH195663.07FU	Glomerellaceae	Colletotrichum	Colletotrichum sp IP 43	98.57	KR015849
4680	2011	Ohu	Syzygium longipes	4	SH195663.07FU	Glomerellaceae	Colletotrichum	Colletotrichum sp IP 43	98.56	KR015851
4681	2011	Ohu	Syzygium longipes	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.01	KR015852
4690	2011	Ohu	Syzygium longipes	8	SH375666.07FU	Glomerellaceae	Colletotrichum	Colletotrichum tropicicola	99.18	KR015853
4692	2011	Ohu	Syzygium longipes	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.02	KR015854
4704	2011	Ohu	Syzygium longipes	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.83	KR015856
4717	2011	Ohu	Syzygium longipes	4	SH195663.07FU	Glomerellaceae	Colletotrichum	Colletotrichum sp IP 43	99.37	KR015858
4718	2011	Ohu	Syzygium longipes	9	SH198965.07FU	unidentified	unidentified	Ascomycota sp	100	KR015859
4719	2011	Ohu	Syzygium longipes	70	SH413545.07FU	Trichocomaceae	Talaromyces	Talaromyces ruber	99.4	KR015860
4739	2011	Ohu	Syzygium longipes	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.53	KR015861
4752	2011	Ohu	Syzygium longipes	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	98.05	KR015864
4773	2011	Ohu	Ficus hahliana	14	SH187148.07FU	Xylariaceae	Hypoxylon	Hypoxylon sp	98.58	KR015866
4780	2011	Ohu	Ficus hahliana	8	SH261145.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nupharicola	99.38	KR015867
4796	2011	Ohu	Ficus hahliana	179	SH190089.07FU	Incertae_sedis	Debaryomyces	Debaryomyces prosopidis	99.09	KR015869
4801	2011	Ohu	Ficus hahliana	178	SH008994.07FU	Meruliaceae	Junghuhnia	Junghuhnia sp 1 OM 2011	99.11	KR015870
4810	2011	Ohu	Ficus hahliana	8	SH261145.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nupharicola	99.18	KR015872
4815	2011	Ohu	Ficus hahliana	62	SH186265.07FU	Trichocomaceae	Aspergillus	Aspergillus subversicolor	97.76	KR015873

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4827	2011	Ohu	Ficus hahliana	8	SH261145.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nupharicola	99.38	KR015875
4831	2011	Ohu	Ficus hahliana	16	SH207303.07FU	Glomerellaceae	unidentified	Glomerellaceae sp	99.6	KR015877
4834	2011	Ohu	Ficus hahliana	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.26	KR015878
4838	2011	Ohu	Ficus hahliana	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.71	KR015879
4843	2011	Ohu	Ficus hahliana	8	SH375666.07FU	Glomerellaceae	Colletotrichum	Colletotrichum tropicicola	99.18	KR015880
4850	2011	Ohu	Ficus hahliana	42	SH195934.07FU	Xylariaceae	Muscodor	Muscodor sp	100	KR015881
4852	2011	Ohu	Ficus hahliana	138	SH025302.07FU	unidentified	unidentified	Microascales sp	93.59	KR015882
4854	2011	Ohu	Ficus hahliana	41	SH187156.07FU	Xylariaceae	Hypoxylon	Hypoxylon investiens	99.29	KR015883
4857	2011	Ohu	Ficus hahliana	138	SH025296.07FU	Halosphaeriaceae	unidentified	Halosphaeriaceae sp	93.79	KR015884
4866	2011	Ohu	Ficus hahliana	8	SH195649.07FU	Glomerellaceae	Colletotrichum	Colletotrichum xanthorrhoeae	98.8	KR015885
4882	2011	Ohu	Ficus pungens	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	98.43	KR015887
4886	2011	Ohu	Ficus pungens	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR015888
4890	2011	Ohu	Ficus pungens	177	SH206861.07FU	Mycosphaerellaceae	unidentified	Mycosphaerellaceae sp	94.85	KR015889
4891	2011	Ohu	Ficus pungens	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR015890
4893	2011	Ohu	Ficus pungens	79	SH181421.07FU	unidentified	unidentified	Pleosporales sp	99.79	KR015891
4897	2011	Ohu	Ficus pungens	176	SH016312.07FU	Sporormiaceae	unidentified	Sporormiaceae sp	92.64	KR015892
4904	2011	Ohu	Ficus pungens	172	SH211177.07FU	unidentified	unidentified	Ascomycota sp	99.01	KR015894
4911	2011	Ohu	Ficus pungens	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.65	KR015896
4913	2011	Ohu	Ficus pungens	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.83	KR015897
4914	2011	Ohu	Ficus pungens	95	SH217390.07FU	Xylariaceae	Xylaria	Xylaria sp	98.01	KR015898
4917	2011	Ohu	Ficus pungens	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	98.64	KR015899
4918	2011	Ohu	Ficus pungens	43	SH185533.07FU	Valsaceae	unidentified	Valsaceae sp	98.81	KR015900
4919	2011	Ohu	Ficus pungens	175	SH406222.07FU	Mycosphaerellaceae	Pseudocercospora	Pseudocercospora corylopsidis	99.13	KR015901
4921	2011	Ohu	Ficus pungens	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR015903
4922	2011	Ohu	Ficus pungens	36	SH195036.07FU	Xylariaceae	Nemania	Nemania primolutea	99.8	KR015904
4925	2011	Ohu	Ficus pungens	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.96	KR015905
4926	2011	Ohu	Ficus pungens	174	SH198357.07FU	Xylariaceae	Xylaria	Xylaria sp	98.91	KR015906
4927	2011	Ohu	Ficus pungens	62	SH186265.07FU	Trichocomaceae	Aspergillus	Aspergillus subversicolor	97.78	KR015907
4929	2011	Ohu	Ficus pungens	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	98.15	KR015908
4930	2011	Ohu	Ficus pungens	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR015909
4936	2011	Ohu	Ficus pungens	84	SH459506.07FU	unidentified	unidentified	Sordariales sp	96.62	KR015910

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4943	2011	Ohu	Macaranga aleuritoides	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.89	KR015912
4944	2011	Ohu	Macaranga aleuritoides	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.08	KR015913
4946	2011	Ohu	Macaranga aleuritoides	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.4	KR015914
4947	2011	Ohu	Macaranga aleuritoides	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	98.35	KR015915
4950	2011	Ohu	Macaranga aleuritoides	167	SH185079.07FU	Polyporaceae	unidentified	Polyporaceae sp	99.45	KR015917
4952	2011	Ohu	Macaranga aleuritoides	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.06	KR015918
4954	2011	Ohu	Macaranga aleuritoides	33	SH097199.07FU	Hypocreaceae	Hypocrea	Hypocrea lixii	99.62	KR015919
4956	2011	Ohu	Macaranga aleuritoides	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.05	KR015920
4957	2011	Ohu	Macaranga aleuritoides	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	98.42	KR015921
4959	2011	Ohu	Macaranga aleuritoides	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR015922
4960	2011	Ohu	Macaranga aleuritoides	94	SH211303.07FU	Halosphaeriaceae	unidentified	Halosphaeriaceae sp	98.6	KR015924
4965	2011	Ohu	Macaranga aleuritoides	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.01	KR015925
4969	2011	Ohu	Macaranga aleuritoides	32	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	92.22	KR015926
4973	2011	Ohu	Macaranga aleuritoides	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.89	KR015927
4974	2011	Ohu	Macaranga aleuritoides	119	SH200304.07FU	Sympoventuriaceae	unidentified	Sympoventuriaceae sp	92.92	KR015928
4978	2011	Ohu	Macaranga aleuritoides	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	97.38	KR015929
4987	2011	Ohu	Macaranga aleuritoides	116	SH193905.07FU	Xylariaceae	Xylaria	Xylaria sp WR1	96.79	KR015931
4991	2011	Ohu	Macaranga aleuritoides	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR015933
4997	2011	Ohu	Macaranga aleuritoides	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	97.61	KR015934
5002	2011	Ohu	Macaranga bifoveata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97	KR015938
5006	2011	Ohu	Macaranga bifoveata	62	SH186265.07FU	Trichocomaceae	Aspergillus	Aspergillus subversicolor	98.19	KR015939
5020	2011	Ohu	Macaranga bifoveata	79	SH181421.07FU	unidentified	unidentified	Pleosporales sp	98.55	KR015942
5029	2011	Ohu	Macaranga bifoveata	70	SH282916.07FU	Trichocomaceae	Talaromyces	Talaromyces amestolkiae	100	KR015943
5034	2011	Ohu	Macaranga bifoveata	40	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	92.93	KR015944
5035	2011	Ohu	Macaranga bifoveata	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.83	KR015945
5036	2011	Ohu	Macaranga bifoveata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	98.35	KR015946
5056	2011	Ohu	Macaranga bifoveata	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.65	KR015947
5057	2011	Ohu	Macaranga bifoveata	173	SH202183.07FU	unidentified	unidentified	Sordariales sp	99.78	KR015948
5059	2011	Ohu	Macaranga bifoveata	94	SH211305.07FU	Halosphaeriaceae	unidentified	Halosphaeriaceae sp	97.49	KR015949
5080	2011	Ohu	Ficus pungens	172	SH211177.07FU	unidentified	unidentified	Ascomycota sp	99.01	KR015951
5081	2011	Ohu	Ficus pungens	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR015952

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5085	2011	Ohu	Ficus pungens	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR015953
5086	2011	Ohu	Ficus pungens	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.83	KR015954
5090	2011	Ohu	Ficus pungens	172	SH211177.07FU	unidentified	unidentified	Ascomycota sp	99.01	KR015955
5095	2011	Ohu	Ficus pungens	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.83	KR015956
5096	2011	Ohu	Ficus pungens	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR015957
5099	2011	Ohu	Ficus pungens	171	SH485952.07FU	Meruliaceae	Junghuhnia	Junghuhnia crustacea	93.65	KR015958
5118	2011	Ohu	Ficus pungens	94	SH211303.07FU	Halosphaeriaceae	unidentified	Halosphaeriaceae sp	98.6	KR015959
5120	2011	Ohu	Ficus pungens	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.18	KR015961
5122	2011	Ohu	Macaranga bifoveata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.67	KR015962
5127	2011	Ohu	Macaranga bifoveata	15	SH127904.07FU	Davidiellaceae	Cladosporium	Cladosporium dominicanum	99.79	KR015963
5129	2011	Ohu	Macaranga bifoveata	94	SH211303.07FU	Halosphaeriaceae	unidentified	Halosphaeriaceae sp	99.39	KR015964
5135	2011	Ohu	Macaranga bifoveata	42	SH195932.07FU	Xylariaceae	Muscodor	Muscodor sp	99.42	KR015966
5138	2011	Ohu	Macaranga bifoveata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.17	KR015967
5139	2011	Ohu	Macaranga bifoveata	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR015968
5140	2011	Ohu	Macaranga bifoveata	108	SH019814.07FU	unidentified	unidentified	fungal sp ARIZ B505	88.72	KR015969
5151	2011	Ohu	Macaranga bifoveata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.03	KR015971
5160	2011	Ohu	Macaranga bifoveata	116	SH193905.07FU	Xylariaceae	Xylaria	Xylaria sp WR1	96.02	KR015972
5161	2011	Ohu	Macaranga bifoveata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.35	KR015973
5162	2011	Ohu	Macaranga bifoveata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.66	KR015974
5169	2011	Ohu	Macaranga bifoveata	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.83	KR015975
5170	2011	Ohu	Macaranga bifoveata	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR015977
5174	2011	Ohu	Macaranga bifoveata	27	SH197058.07FU	Polyporaceae	Trametes	Trametes maxima	99.82	KR015978
5183	2011	Ohu	Macaranga bifoveata	170	SH464406.07FU	Incertae_sedis	Verruconis	Verruconis verruculosa	88.34	KR015979
5191	2011	Ohu	Macaranga bifoveata	40	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	92.79	KR015980
5201	2011	Ohu	Macaranga bifoveata	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.65	KR015982
5216	2011	Ohu	Macaranga bifoveata	32	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	92.4	KR015983
5218	2011	Ohu	Macaranga bifoveata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.03	KR015984
5219	2011	Ohu	Macaranga bifoveata	19	SH195016.07FU	Xylariaceae	Xylaria	Xylaria longipes	96.21	KR015985
5221	2011	Ohu	Macaranga bifoveata	42	SH195934.07FU	Xylariaceae	Muscodor	Muscodor sp	100	KR015987
5225	2011	Ohu	Macaranga bifoveata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.01	KR015988
5229	2011	Ohu	Macaranga bifoveata	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.13	KR015989

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5233	2011	Ohu	Macaranga bifoveata	14	SH008472.07FU	unidentified	unidentified	Xylariales sp	95.66	KR015991
5233	2011	Ohu	Macaranga bifoveata	14	SH008472.07FU	unidentified	unidentified	Xylariales sp	89.47	KR015991
5295	2011	Ohu	Macaranga aleuritoides	169	SH179237.07FU	Trichocomaceae	Aspergillus	Aspergillus cibarius	98.74	KR015994
5308	2011	Ohu	Macaranga aleuritoides	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.48	KR015997
5309	2011	Ohu	Macaranga aleuritoides	62	SH186265.07FU	Trichocomaceae	Aspergillus	Aspergillus subversicolor	97.35	KR015998
5343	2011	Ohu	Macaranga aleuritoides	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.3	KR016002
5361	2011	Wanang	Macaranga aleuritoides	73	SH194525.07FU	Mycosphaerellaceae	Zasmidium	Zasmidium sp	97.08	KR016004
5413	2011	Wanang	Macaranga aleuritoides	168	SH202031.07FU	Meruliaceae	Gloeoporus	Gloeoporus pannocinctus	86.93	KR016011
5476	2011	Wanang	Macaranga aleuritoides	167	SH185079.07FU	Polyporaceae	unidentified	Polyporaceae sp	99.26	KR016013
5542	2011	Wamangu	Psychotria micrococca	109	SH186067.07FU	Xylariaceae	unidentified	Xylariaceae sp	100	KR016021
5551	2011	Wamangu	Psychotria micrococca	109	SH186067.07FU	Xylariaceae	unidentified	Xylariaceae sp	99.79	KR016023
5552	2011	Wamangu	Psychotria micrococca	114	SH211301.07FU	Halosphaeriaceae	unidentified	Halosphaeriaceae sp	97.01	KR016024
5555	2011	Wamangu	Psychotria micrococca	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	98.25	KR016025
5557	2011	Wamangu	Psychotria micrococca	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.24	KR016026
5558	2011	Wamangu	Psychotria micrococca	88	SH010765.07FU	unidentified	unidentified	Diaporthales sp	88.69	KR016027
5559	2011	Wamangu	Psychotria micrococca	114	SH211301.07FU	Halosphaeriaceae	unidentified	Halosphaeriaceae sp	97.02	KR016028
5570	2011	Wamangu	Psychotria micrococca	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.88	KR016031
5571	2011	Wamangu	Psychotria micrococca	67	SH028987.07FU	Ophiocordycipitaceae	Ophiocordyceps	Ophiocordyceps sobolifera	97.22	KR016032
5576	2011	Wamangu	Psychotria micrococca	67	SH028987.07FU	Ophiocordycipitaceae	Ophiocordyceps	Ophiocordyceps sobolifera	97.22	KR016033
5582	2011	Wamangu	Psychotria micrococca	120	SH190983.07FU	Incertae_sedis	unidentified	Hypocreales sp	98.77	KR016034
5583	2011	Wamangu	Psychotria micrococca	67	SH028987.07FU	Ophiocordycipitaceae	Ophiocordyceps	Ophiocordyceps sobolifera	97.22	KR016035
5597	2011	Wamangu	Psychotria micrococca	8	SH195649.07FU	Glomerellaceae	Colletotrichum	Colletotrichum xanthorrhoeae	98.59	KR016037
5600	2011	Wamangu	Psychotria micrococca	138	SH025302.07FU	unidentified	unidentified	Microascales sp	93.79	KR016040
5601	2011	Wamangu	Macaranga punctata	166	SH028987.07FU	Ophiocordycipitaceae	Ophiocordyceps	Ophiocordyceps sobolifera	97.22	KR016041
5625	2011	Wamangu	Macaranga punctata	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	98.41	KR016043
5627	2011	Wamangu	Macaranga punctata	67	SH193464.07FU	Microascaceae	Scopulariopsis	Scopulariopsis sp A 4 1	88.24	KR016044
5629	2011	Wamangu	Macaranga punctata	109	SH186067.07FU	Xylariaceae	unidentified	Xylariaceae sp	100	KR016045
5632	2011	Wamangu	Macaranga punctata	117	SH025302.07FU	unidentified	unidentified	Microascales sp	86.4	KR016046
5633	2011	Wamangu	Macaranga punctata	109	SH186067.07FU	Xylariaceae	unidentified	Xylariaceae sp	100	KR016047
5635	2011	Wamangu	Macaranga punctata	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.83	KR016048
5637	2011	Wamangu	Macaranga punctata	109	SH186067.07FU	Xylariaceae	unidentified	Xylariaceae sp	100	KR016049

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5646	2011	Wamangu	Macaranga punctata	88	SH010765.07FU	unidentified	unidentified	Diaporthales sp	88.15	KR016050
5650	2011	Wamangu	Macaranga punctata	109	SH186067.07FU	Xylariaceae	unidentified	Xylariaceae sp	100	KR016051
5657	2011	Wamangu	Macaranga punctata	165	SH090424.07FU	Diaporthaceae	Diaporthe	Diaporthe lithicola	99.79	KR016052
5664	2011	Wamangu	Ficus pungens	164	SH190108.07FU	Incertae_sedis	Candida	Candida spencermartinsiae	99.8	KR016053
5666	2011	Wamangu	Ficus pungens	48	SH187150.07FU	Xylariaceae	Hypoxylon	Hypoxylon sp LC06	97.31	KR016054
5668	2011	Wamangu	Ficus pungens	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.83	KR016055
5669	2011	Wamangu	Ficus pungens	67	SH193464.07FU	Microascaceae	Scopulariopsis	Scopulariopsis sp A 4 1	86.42	KR016056
5670	2011	Wamangu	Ficus pungens	109	SH186067.07FU	Xylariaceae	unidentified	Xylariaceae sp	99.8	KR016058
5672	2011	Wamangu	Ficus pungens	109	SH186067.07FU	Xylariaceae	unidentified	Xylariaceae sp	100	KR016059
5676	2011	Wamangu	Ficus pungens	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	97.17	KR016060
5677	2011	Wamangu	Ficus pungens	163	SH031170.07FU	Incertae_sedis	Scolecobasidium	Scolecobasidium sp ATT130	90.23	KR016061
5688	2011	Wamangu	Ficus pungens	67	SH028987.07FU	Ophiocordycipitaceae	Ophiocordyceps	Ophiocordyceps sobolifera	97.22	KR016062
5689	2011	Wamangu	Ficus pungens	162	SH193082.07FU	unidentified	unidentified	Ascomycota sp	98.48	KR016063
5712	2011	Wamangu	Ficus pungens	161	SH460941.07FU	unidentified	unidentified	Ascomycota sp	91.26	KR016067
5720	2011	Wamangu	Ficus pungens	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.58	KR016069
5721	2011	Wamangu	Macaranga bifoveata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.25	KR016070
5727	2011	Wamangu	Macaranga bifoveata	88	SH010765.07FU	unidentified	unidentified	Diaporthales sp	88.45	KR016071
5728	2011	Wamangu	Macaranga bifoveata	136	SH214931.07FU	Togniniaceae	Phaeoacremonium	Phaeoacremonium rubrigenum	88.92	KR016072
5730	2011	Wamangu	Macaranga bifoveata	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016074
5732	2011	Wamangu	Macaranga bifoveata	136	SH214931.07FU	Togniniaceae	Phaeoacremonium	Phaeoacremonium rubrigenum	88.92	KR016075
5733	2011	Wamangu	Macaranga bifoveata	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016076
5738	2011	Wamangu	Macaranga bifoveata	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016077
5740	2011	Wamangu	Macaranga bifoveata	66	SH180176.07FU	Chaetomiaceae	Chaetomium	Chaetomium sp	99.79	KR016078
5741	2011	Wamangu	Macaranga bifoveata	56	SH211304.07FU	Halosphaeriaceae	unidentified	Halosphaeriaceae sp	97.29	KR016079
5748	2011	Wamangu	Macaranga bifoveata	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016080
5752	2011	Wamangu	Macaranga bifoveata	29	SH192878.07FU	Hymenochaetaceae	Phellinus	Phellinus noxius	97.88	KR016082
5759	2011	Wamangu	Macaranga bifoveata	62	SH186265.07FU	Trichocomaceae	Aspergillus	Aspergillus subversicolor	99.18	KR016083
5761	2011	Wamangu	Macaranga bifoveata	5	SH190215.07FU	Trichocomaceae	Penicillium	Penicillium citrinum	99.79	KR016085
5763	2011	Wamangu	Macaranga bifoveata	5	SH190215.07FU	Trichocomaceae	Penicillium	Penicillium citrinum	100	KR016086
5770	2011	Wamangu	Macaranga bifoveata	37	SH190216.07FU	Trichocomaceae	Penicillium	Penicillium steckii	100	KR016087
5771	2011	Wamangu	Macaranga bifoveata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.89	KR016088

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5772	2011	Wamangu	Macaranga bifoveata	32	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	92.33	KR016089
5774	2011	Wamangu	Macaranga bifoveata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.19	KR016090
5776	2011	Wamangu	Macaranga bifoveata	160	SH220573.07FU	Sporormiaceae	Preussia	Preussia sp FF 2011	98.89	KR016091
5778	2011	Wamangu	Macaranga bifoveata	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016092
5783	2011	Wamangu	Macaranga punctata	88	SH010765.07FU	unidentified	unidentified	Diaporthales sp	87.88	KR016093
5790	2011	Wamangu	Macaranga punctata	88	SH010765.07FU	unidentified	unidentified	Diaporthales sp	88.15	KR016095
5793	2011	Wamangu	Macaranga punctata	159	SH180762.07FU	unidentified	unidentified	Pleosporales sp	100	KR016096
5796	2011	Wamangu	Macaranga punctata	158	SH197857.07FU	Chaetothyriaceae	Cyphellophora	Cyphellophora europaea	99.62	KR016097
5803	2011	Wamangu	Macaranga punctata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.88	KR016100
5804	2011	Wamangu	Macaranga punctata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.52	KR016101
5806	2011	Wamangu	Macaranga punctata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.03	KR016102
5809	2011	Wamangu	Macaranga punctata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.07	KR016103
5810	2011	Wamangu	Macaranga punctata	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.83	KR016104
5812	2011	Wamangu	Macaranga punctata	67	SH193464.07FU	Microascaceae	Scopulariopsis	Scopulariopsis sp A 4 1	88.24	KR016105
5815	2011	Wamangu	Macaranga punctata	42	SH195932.07FU	Xylariaceae	Muscodor	Muscodor sp	100	KR016106
5817	2011	Wamangu	Macaranga punctata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.91	KR016107
5821	2011	Wamangu	Macaranga punctata	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.83	KR016109
5823	2011	Wamangu	Macaranga punctata	157	SH025295.07FU	unidentified	unidentified	Microascales sp	94.99	KR016110
5836	2011	Wamangu	Macaranga punctata	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.65	KR016112
5837	2011	Wamangu	Macaranga punctata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.18	KR016113
5838	2011	Wamangu	Macaranga punctata	9	SH198965.07FU	unidentified	unidentified	Ascomycota sp	99.82	KR016114
5845	2011	Wamangu	Macaranga punctata	8	SH261145.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nupharicola	98.97	KR016115
5850	2011	Wamangu	Macaranga punctata	156	SH193450.07FU	Meruliaceae	Phlebia	Phlebia aurea	94.71	KR016116
5853	2011	Wamangu	Macaranga punctata	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.65	KR016117
5854	2011	Wamangu	Macaranga punctata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	98.37	KR016118
5855	2011	Wamangu	Macaranga punctata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.99	KR016119
5856	2011	Wamangu	Macaranga punctata	70	SH282916.07FU	Trichocomaceae	Talaromyces	Talaromyces amestolkiae	100	KR016120
5859	2011	Wamangu	Macaranga punctata	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016121
5860	2011	Wamangu	Macaranga punctata	117	SH025302.07FU	unidentified	unidentified	Microascales sp	86.71	KR016123
5862	2011	Wamangu	Macaranga punctata	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016124
5864	2011	Wamangu	Macaranga punctata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.36	KR016125

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5865	2011	Wamangu	Macaranga punctata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.62	KR016126
5866	2011	Wamangu	Macaranga punctata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.51	KR016127
5867	2011	Wamangu	Macaranga punctata	42	SH195932.07FU	Xylariaceae	Muscodor	Muscodor sp	99.41	KR016128
5869	2011	Wamangu	Macaranga punctata	126	SH191316.07FU	Sordariaceae	Neurospora	Neurospora terricola	98.22	KR016129
5871	2011	Wamangu	Macaranga punctata	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016130
5874	2011	Wamangu	Macaranga punctata	67	SH193464.07FU	Microascaceae	Scopulariopsis	Scopulariopsis sp A 4 1	88.24	KR016131
5876	2011	Wamangu	Macaranga punctata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.91	KR016132
5877	2011	Wamangu	Macaranga punctata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.88	KR016133
5879	2011	Wamangu	Macaranga punctata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.89	KR016134
5881	2011	Wamangu	Macaranga punctata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.09	KR016136
5882	2011	Wamangu	Macaranga punctata	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016137
5884	2011	Wamangu	Macaranga punctata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.98	KR016138
5885	2011	Wamangu	Macaranga punctata	155	SH199845.07FU	unidentified	unidentified	Polyporales sp	99.46	KR016139
5886	2011	Wamangu	Macaranga punctata	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.83	KR016140
5887	2011	Wamangu	Macaranga punctata	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016141
5889	2011	Wamangu	Macaranga punctata	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016142
5892	2011	Wamangu	Macaranga punctata	70	SH282916.07FU	Trichocomaceae	Talaromyces	Talaromyces amestolkiae	100	KR016143
5897	2011	Wamangu	Macaranga punctata	154	SH211308.07FU	unidentified	unidentified	Sordariomycetes sp	93.77	KR016144
5898	2011	Wamangu	Macaranga punctata	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.3	KR016145
5900	2011	Wamangu	Macaranga punctata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.76	KR016147
5901	2011	Wamangu	Ficus hahliana	153	SH215739.07FU	unidentified	unidentified	Sordariomycetes sp	90.51	KR016148
5902	2011	Wamangu	Ficus hahliana	152	SH183239.07FU	Hymenochaetaceae	Inonotus	Inonotus tropicalis	84.68	KR016149
5904	2011	Wamangu	Ficus hahliana	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.05	KR016150
5905	2011	Wamangu	Ficus hahliana	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016151
5906	2011	Wamangu	Ficus hahliana	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.83	KR016152
5907	2011	Wamangu	Ficus hahliana	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016153
5911	2011	Wamangu	Ficus hahliana	151	SH220574.07FU	Lasiosphaeriaceae	Zopfiella	Zopfiella marina	97.56	KR016154
5913	2011	Wamangu	Ficus hahliana	136	SH214931.07FU	Togniniaceae	Phaeoacremonium	Phaeoacremonium rubrigenum	88.96	KR016155
5917	2011	Wamangu	Ficus hahliana	125	SH214452.07FU	unidentified	unidentified	Agaricales sp	92.85	KR016156
5922	2011	Wamangu	Ficus hahliana	136	SH214931.07FU	Togniniaceae	Phaeoacremonium	Phaeoacremonium rubrigenum	88.92	KR016157
5923	2011	Wamangu	Ficus hahliana	13	SH198541.07FU	unidentified	unidentified	Polyporales sp	99.47	KR016158

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5929	2011	Wamangu	Ficus hahliana	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.65	KR016159
5930	2011	Wamangu	Ficus hahliana	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.83	KR016160
5934	2011	Wamangu	Ficus hahliana	150	SH204049.07FU	Incertae_sedis	Periconia	Periconia sp LVPEIH4157 10	98.39	KR016161
5935	2011	Wamangu	Ficus hahliana	61	SH192455.07FU	Meruliaceae	Phlebia	Phlebia uda	89.66	KR016162
5936	2011	Wamangu	Ficus hahliana	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016163
5937	2011	Wamangu	Ficus hahliana	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.33	KR016164
5938	2011	Wamangu	Ficus hahliana	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.04	KR016165
5940	2011	Wamangu	Ficus hahliana	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	98.21	KR016166
5942	2011	Wamangu	Ficus hahliana	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.65	KR016167
5943	2011	Wamangu	Ficus hahliana	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.9	KR016168
5945	2011	Wamangu	Ficus hahliana	149	SH207879.07FU	unidentified	unidentified	Sordariomycetes sp	83.21	KR016169
5946	2011	Wamangu	Ficus hahliana	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016170
5947	2011	Wamangu	Ficus hahliana	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.3	KR016171
5948	2011	Wamangu	Ficus hahliana	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.64	KR016172
5951	2011	Wamangu	Ficus hahliana	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.99	KR016173
5952	2011	Wamangu	Ficus hahliana	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.23	KR016174
5953	2011	Wamangu	Ficus hahliana	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.13	KR016175
5954	2011	Wamangu	Ficus hahliana	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.99	KR016176
5957	2011	Wamangu	Ficus hahliana	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016177
5959	2011	Wamangu	Ficus hahliana	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016178
5960	2011	Wamangu	Ficus hahliana	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.65	KR016180
5961	2011	Wamangu	Syzygium longipes	13	SH198541.07FU	unidentified	unidentified	Polyporales sp	99.82	KR016181
5964	2011	Wamangu	Syzygium longipes	9	SH198965.07FU	unidentified	unidentified	Ascomycota sp	100	KR016182
5965	2011	Wamangu	Syzygium longipes	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.99	KR016183
5966	2011	Wamangu	Syzygium longipes	148	SH018218.07FU	Meripilaceae	Rigidoporus	Rigidoporus ulmarius	88.68	KR016184
5968	2011	Wamangu	Syzygium longipes	147	SH030398.07FU	unidentified	unidentified	Corticiales sp	86.4	KR016185
5969	2011	Wamangu	Syzygium longipes	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016186
5971	2011	Wamangu	Syzygium longipes	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	98.46	KR016187
5972	2011	Wamangu	Syzygium longipes	146	SH009711.07FU	unidentified	unidentified	fungal sp E14301A	95.36	KR016188
5976	2011	Wamangu	Syzygium longipes	145	SH212725.07FU	Diatrypaceae	Eutypa	Eutypa spinosa	85.27	KR016189
5980	2011	Wamangu	Syzygium longipes	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016190

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5981	2011	Wamangu	Syzygium longipes	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016191
5992	2011	Wamangu	Syzygium longipes	65	SH025295.07FU	unidentified	unidentified	Microascales sp	96.78	KR016193
5997	2011	Wamangu	Syzygium longipes	65	SH025295.07FU	unidentified	unidentified	Microascales sp	96.18	KR016194
6000	2011	Wamangu	Syzygium longipes	8	SH375666.07FU	Glomerellaceae	Colletotrichum	Colletotrichum tropicicola	99.18	KR016198
6005	2011	Wamangu	Syzygium longipes	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.83	KR016199
6007	2011	Wamangu	Syzygium longipes	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.83	KR016200
6009	2011	Wamangu	Syzygium longipes	44	SH176593.07FU	Xylariaceae	unidentified	Xylariaceae sp	100	KR016201
6010	2011	Wamangu	Syzygium longipes	8	SH375666.07FU	Glomerellaceae	Colletotrichum	Colletotrichum tropicicola	99.79	KR016202
6012	2011	Wamangu	Syzygium longipes	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016203
6015	2011	Wamangu	Syzygium longipes	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.99	KR016204
6023	2011	Wamangu	Syzygium longipes	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.84	KR016205
6026	2011	Wamangu	Syzygium longipes	8	SH375666.07FU	Glomerellaceae	Colletotrichum	Colletotrichum tropicicola	99.18	KR016206
6030	2011	Wamangu	Syzygium longipes	8	SH375666.07FU	Glomerellaceae	Colletotrichum	Colletotrichum tropicicola	99.79	KR016207
6031	2011	Wamangu	Syzygium longipes	9	SH198965.07FU	unidentified	unidentified	Ascomycota sp	99.46	KR016208
6032	2011	Wamangu	Syzygium longipes	8	SH261145.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nupharicola	99.38	KR016209
6033	2011	Wamangu	Syzygium longipes	9	SH198965.07FU	unidentified	unidentified	Ascomycota sp	99.64	KR016210
6034	2011	Wamangu	Syzygium longipes	8	SH195649.07FU	Glomerellaceae	Colletotrichum	Colletotrichum xanthorrhoeae	98.6	KR016211
6035	2011	Wamangu	Syzygium longipes	8	SH375666.07FU	Glomerellaceae	Colletotrichum	Colletotrichum tropicicola	99.79	KR016212
6036	2011	Wamangu	Syzygium longipes	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016213
6037	2011	Wamangu	Syzygium longipes	65	SH025295.07FU	unidentified	unidentified	Microascales sp	96.45	KR016214
6038	2011	Wamangu	Syzygium longipes	144	SH194321.07FU	Chaetosphaeriaceae	Dictyochaeta	Dictyochaeta simplex	85.84	KR016215
6039	2011	Wamangu	Syzygium longipes	69	SH215896.07FU	unidentified	unidentified	Sordariomycetes sp	93.56	KR016216
6040	2011	Wamangu	Syzygium longipes	8	SH375666.07FU	Glomerellaceae	Colletotrichum	Colletotrichum tropicicola	99.18	KR016217
6043	2011	Wamangu	Syzygium longipes	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.64	KR016218
6048	2011	Wamangu	Syzygium longipes	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.02	KR016219
6051	2011	Wamangu	Syzygium longipes	66	SH180176.07FU	Chaetomiaceae	Chaetomium	Chaetomium sp	99.79	KR016220
6052	2011	Wamangu	Syzygium longipes	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	97.3	KR016221
6053	2011	Wamangu	Syzygium longipes	66	SH180176.07FU	Chaetomiaceae	Chaetomium	Chaetomium sp	99.79	KR016222
6056	2011	Wamangu	Syzygium longipes	131	SH215898.07FU	Glomerellaceae	Colletotrichum	Colletotrichum sp	93.25	KR016223
6058	2011	Wamangu	Syzygium longipes	1	SH408631.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nymphaeae	99.21	KR016224
6059	2011	Wamangu	Syzygium longipes	131	SH215898.07FU	Glomerellaceae	Colletotrichum	Colletotrichum sp	93.49	KR016225

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6060	2011	Wamangu	Syzygium longipes	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	98.95	KR016227
6061	2011	Wamangu	Syzygium longipes	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.65	KR016228
6062	2011	Wamangu	Syzygium longipes	111	SH198482.07FU	Xylariaceae	unidentified	Xylariaceae sp	87.9	KR016229
6063	2011	Wamangu	Syzygium longipes	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	98.38	KR016230
6068	2011	Wamangu	Syzygium longipes	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.75	KR016231
6069	2011	Wamangu	Syzygium longipes	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.67	KR016232
6071	2011	Wamangu	Syzygium longipes	8	SH375666.07FU	Glomerellaceae	Colletotrichum	Colletotrichum tropicicola	99.79	KR016233
6072	2011	Wamangu	Syzygium longipes	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	98.95	KR016234
6073	2011	Wamangu	Syzygium longipes	68	SH205618.07FU	Amphisphaeriaceae	Pestalotiopsis	Pestalotiopsis sp	99.8	KR016235
6074	2011	Wamangu	Syzygium longipes	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.81	KR016236
6075	2011	Wamangu	Syzygium longipes	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016237
6076	2011	Wamangu	Syzygium longipes	68	SH205619.07FU	Amphisphaeriaceae	Pestalotiopsis	Pestalotiopsis sp	99.8	KR016238
6077	2011	Wamangu	Syzygium longipes	8	SH375666.07FU	Glomerellaceae	Colletotrichum	Colletotrichum tropicicola	99.79	KR016239
6078	2011	Wamangu	Syzygium longipes	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.28	KR016240
6080	2011	Wamangu	Syzygium longipes	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016242
6082	2011	Wamangu	Macaranga aleuritoides	98	SH195844.07FU	Mycosphaerellaceae	Stenella	Stenella queenslandica	99.78	KR016243
6083	2011	Wamangu	Macaranga aleuritoides	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016244
6085	2011	Wamangu	Macaranga aleuritoides	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.46	KR016245
6093	2011	Wamangu	Macaranga aleuritoides	42	SH195934.07FU	Xylariaceae	Muscodor	Muscodor sp	100	KR016246
6096	2011	Wamangu	Macaranga aleuritoides	32	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	92.07	KR016247
6099	2011	Wamangu	Macaranga aleuritoides	70	SH282916.07FU	Trichocomaceae	Talaromyces	Talaromyces amestolkiae	100	KR016248
6100	2011	Wamangu	Macaranga aleuritoides	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	98.15	KR016250
6102	2011	Wamangu	Macaranga aleuritoides	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016251
6103	2011	Wamangu	Macaranga aleuritoides	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016252
6104	2011	Wamangu	Macaranga aleuritoides	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016253
6105	2011	Wamangu	Macaranga aleuritoides	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.05	KR016254
6106	2011	Wamangu	Macaranga aleuritoides	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016255
6107	2011	Wamangu	Macaranga aleuritoides	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.18	KR016256
6108	2011	Wamangu	Macaranga aleuritoides	98	SH195844.07FU	Mycosphaerellaceae	Stenella	Stenella queenslandica	99.78	KR016257
6109	2011	Wamangu	Macaranga aleuritoides	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016258
6110	2011	Wamangu	Macaranga aleuritoides	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.83	KR016259

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6115	2011	Wamangu	Macaranga aleuritoides	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.56	KR016260
6118	2011	Wamangu	Macaranga aleuritoides	119	SH200304.07FU	Sympoventuriaceae	unidentified	Sympoventuriaceae sp	92.51	KR016261
6126	2011	Wamangu	Macaranga aleuritoides	143	SH211308.07FU	unidentified	unidentified	Sordariomycetes sp	93.91	KR016263
6130	2011	Wamangu	Macaranga aleuritoides	56	SH211304.07FU	Halosphaeriaceae	unidentified	Halosphaeriaceae sp	97.83	KR016264
6131	2011	Wamangu	Macaranga aleuritoides	32	SH195016.07FU	Xylariaceae	Xylaria	Xylaria longipes	97.21	KR016265
6132	2011	Wamangu	Macaranga aleuritoides	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.36	KR016266
6134	2011	Wamangu	Macaranga aleuritoides	136	SH214931.07FU	Togniniaceae	Phaeoacremonium	Phaeoacremonium rubrigenum	88.96	KR016267
6135	2011	Wamangu	Macaranga aleuritoides	79	SH181421.07FU	unidentified	unidentified	Pleosporales sp	98.74	KR016268
6137	2011	Wamangu	Macaranga aleuritoides	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.65	KR016269
6138	2011	Wamangu	Macaranga aleuritoides	109	SH186067.07FU	Xylariaceae	unidentified	Xylariaceae sp	100	KR016270
6141	2011	Wamangu	Ficus hahliana	49	SH197714.07FU	Incertae_sedis	Candida	Candida parapsilosis	100	KR016272
6143	2011	Wamangu	Ficus hahliana	41	SH187156.07FU	Xylariaceae	Hypoxylon	Hypoxylon investiens	99.11	KR016273
6144	2011	Wamangu	Ficus hahliana	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.02	KR016274
6145	2011	Wamangu	Ficus hahliana	48	SH187150.07FU	Xylariaceae	Hypoxylon	Hypoxylon sp LC06	97.82	KR016275
6147	2011	Wamangu	Ficus hahliana	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.74	KR016276
6148	2011	Wamangu	Ficus hahliana	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.52	KR016277
6150	2011	Wamangu	Ficus hahliana	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016279
6151	2011	Wamangu	Ficus hahliana	142	SH212868.07FU	unidentified	unidentified	Polyporales sp	99.64	KR016280
6154	2011	Wamangu	Ficus hahliana	67	SH028987.07FU	Ophiocordycipitaceae	Ophiocordyceps	Ophiocordyceps sobolifera	97.22	KR016281
6155	2011	Wamangu	Ficus hahliana	67	SH028987.07FU	Ophiocordycipitaceae	Ophiocordyceps	Ophiocordyceps sobolifera	97.22	KR016282
6158	2011	Wamangu	Ficus hahliana	67	SH028987.07FU	Ophiocordycipitaceae	Ophiocordyceps	Ophiocordyceps sobolifera	97.22	KR016283
6159	2011	Wamangu	Ficus hahliana	67	SH028987.07FU	Ophiocordycipitaceae	Ophiocordyceps	Ophiocordyceps sobolifera	97.22	KR016284
6161	2011	Wamangu	Ficus hahliana	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.06	KR016285
6162	2011	Wamangu	Ficus hahliana	136	SH214931.07FU	Togniniaceae	Phaeoacremonium	Phaeoacremonium rubrigenum	88.92	KR016286
6163	2011	Wamangu	Ficus hahliana	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.83	KR016287
6164	2011	Wamangu	Ficus hahliana	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.61	KR016288
6165	2011	Wamangu	Ficus hahliana	141	SH211305.07FU	Halosphaeriaceae	unidentified	Halosphaeriaceae sp	95.2	KR016289
6166	2011	Wamangu	Ficus hahliana	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016290
6168	2011	Wamangu	Ficus hahliana	105	SH194844.07FU	unidentified	unidentified	Sordariomycetes sp	97.31	KR016291
6169	2011	Wamangu	Ficus hahliana	48	SH187150.07FU	Xylariaceae	Hypoxylon	Hypoxylon sp LC06	97.98	KR016292
6172	2011	Wamangu	Ficus hahliana	88	SH010765.07FU	unidentified	unidentified	Diaporthales sp	88.11	KR016294

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6173	2011	Wamangu	Ficus hahliana	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.21	KR016295
6174	2011	Wamangu	Ficus hahliana	136	SH214931.07FU	Togniniaceae	Phaeoacremonium	Phaeoacremonium rubrigenum	88.61	KR016296
6175	2011	Wamangu	Ficus hahliana	140	SH028987.07FU	Ophiocordycipitaceae	Ophiocordyceps	Ophiocordyceps sobolifera	96.11	KR016297
6178	2011	Wamangu	Ficus hahliana	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.09	KR016298
6179	2011	Wamangu	Ficus hahliana	41	SH187156.07FU	Xylariaceae	Hypoxylon	Hypoxylon investiens	99.29	KR016299
6180	2011	Wamangu	Ficus hahliana	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.76	KR016301
6183	2011	Wamangu	Ficus hahliana	67	SH028987.07FU	Ophiocordycipitaceae	Ophiocordyceps	Ophiocordyceps sobolifera	97.22	KR016302
6186	2011	Wamangu	Ficus hahliana	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.39	KR016303
6188	2011	Wamangu	Ficus hahliana	67	SH028987.07FU	Ophiocordycipitaceae	Ophiocordyceps	Ophiocordyceps sobolifera	97.22	KR016304
6189	2011	Wamangu	Ficus hahliana	67	SH193464.07FU	Microascaceae	Scopulariopsis	Scopulariopsis sp A 4 1	88.24	KR016305
6192	2011	Wamangu	Ficus hahliana	67	SH028987.07FU	Ophiocordycipitaceae	Ophiocordyceps	Ophiocordyceps sobolifera	97.22	KR016306
6193	2011	Wamangu	Ficus hahliana	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.07	KR016307
6194	2011	Wamangu	Ficus hahliana	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.05	KR016308
6195	2011	Wamangu	Ficus hahliana	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016309
6196	2011	Wamangu	Ficus hahliana	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.97	KR016310
6197	2011	Wamangu	Ficus hahliana	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016311
6198	2011	Wamangu	Ficus hahliana	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016312
6199	2011	Wamangu	Ficus hahliana	32	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	92.74	KR016313
6200	2011	Wamangu	Ficus hahliana	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.99	KR016315
6203	2011	Wamangu	Macaranga bifoveata	94	SH211303.07FU	Halosphaeriaceae	unidentified	Halosphaeriaceae sp	98.4	KR016316
6204	2011	Wamangu	Macaranga bifoveata	32	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	92.74	KR016317
6207	2011	Wamangu	Macaranga bifoveata	88	SH010765.07FU	unidentified	unidentified	Diaporthales sp	88.45	KR016318
6208	2011	Wamangu	Macaranga bifoveata	88	SH010765.07FU	unidentified	unidentified	Diaporthales sp	87.84	KR016319
6210	2011	Wamangu	Macaranga bifoveata	137	SH202791.07FU	Teratosphaeriaceae	Devriesia	Devriesia sp	89.3	KR016320
6213	2011	Wamangu	Macaranga bifoveata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.73	KR016321
6216	2011	Wamangu	Macaranga bifoveata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	98.28	KR016322
6217	2011	Wamangu	Macaranga bifoveata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.06	KR016323
6218	2011	Wamangu	Macaranga bifoveata	45	SH211154.07FU	Apiosporaceae	Arthrinium	Arthrinium sp PP071021	88.24	KR016324
6219	2011	Wamangu	Macaranga bifoveata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	98.38	KR016325
6220	2011	Wamangu	Macaranga bifoveata	98	SH195844.07FU	Mycosphaerellaceae	Stenella	Stenella queenslandica	97.63	KR016327
6221	2011	Wamangu	Macaranga bifoveata	139	SH464406.07FU	Incertae_sedis	Verruconis	Verruconis verruculosa	94.92	KR016328

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6222	2011	Wamangu	Macaranga bifoveata	67	SH028987.07FU	Ophiocordycipitaceae	Ophiocordyceps	Ophiocordyceps sobolifera	97.22	KR016329
6224	2011	Wamangu	Macaranga bifoveata	138	SH025302.07FU	unidentified	unidentified	Microascales sp	93.58	KR016330
6228	2011	Wamangu	Macaranga bifoveata	67	SH028987.07FU	Ophiocordycipitaceae	Ophiocordyceps	Ophiocordyceps sobolifera	97.22	KR016331
6230	2011	Wamangu	Macaranga bifoveata	36	SH195037.07FU	Xylariaceae	unidentified	Xylariaceae sp	100	KR016332
6231	2011	Wamangu	Macaranga bifoveata	137	SH202791.07FU	Teratosphaeriaceae	Devriesia	Devriesia sp	89.44	KR016333
6232	2011	Wamangu	Macaranga bifoveata	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016334
6234	2011	Wamangu	Macaranga bifoveata	42	SH195932.07FU	Xylariaceae	Muscodor	Muscodor sp	100	KR016335
6235	2011	Wamangu	Macaranga bifoveata	113	SH177190.07FU	Incertae_sedis	Scolecobasidium	Scolecobasidium terreum	93.64	KR016336
6236	2011	Wamangu	Macaranga bifoveata	135	SH186936.07FU	unidentified	unidentified	Pleosporales sp	99.6	KR016337
6238	2011	Wamangu	Macaranga bifoveata	88	SH010765.07FU	unidentified	unidentified	Diaporthales sp	88.45	KR016338
6239	2011	Wamangu	Macaranga bifoveata	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016339
6240	2011	Wamangu	Macaranga bifoveata	109	SH186067.07FU	Xylariaceae	unidentified	Xylariaceae sp	100	KR016340
6241	2011	Wamangu	Macaranga bifoveata	88	SH010765.07FU	unidentified	unidentified	Diaporthales sp	88.45	KR016341
6246	2011	Wamangu	Macaranga bifoveata	88	SH010765.07FU	unidentified	unidentified	Diaporthales sp	88.41	KR016342
6251	2011	Wamangu	Macaranga bifoveata	136	SH214931.07FU	Togniniaceae	Phaeoacremonium	Phaeoacremonium rubrigenum	88.92	KR016344
6256	2011	Wamangu	Macaranga bifoveata	5	SH190215.07FU	Trichocomaceae	Penicillium	Penicillium citrinum	100	KR016345
6260	2011	Wamangu	Macaranga bifoveata	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016346
6261	2011	Wamangu	Ficus variegata	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016347
6262	2011	Wamangu	Ficus variegata	109	SH186067.07FU	Xylariaceae	unidentified	Xylariaceae sp	100	KR016348
6264	2011	Wamangu	Ficus variegata	48	SH187150.07FU	Xylariaceae	Hypoxylon	Hypoxylon sp LC06	97.67	KR016349
6265	2011	Wamangu	Ficus variegata	66	SH180176.07FU	Chaetomiaceae	Chaetomium	Chaetomium sp	99.79	KR016350
6266	2011	Wamangu	Ficus variegata	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016351
6268	2011	Wamangu	Ficus variegata	8	SH261145.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nupharicola	99.38	KR016352
6269	2011	Wamangu	Ficus variegata	120	SH190983.07FU	Incertae_sedis	unidentified	Hypocreales sp	98.77	KR016353
6270	2011	Wamangu	Ficus variegata	135	SH186936.07FU	unidentified	unidentified	Pleosporales sp	100	KR016355
6271	2011	Wamangu	Ficus variegata	120	SH190987.07FU	Incertae_sedis	Wallrothiella	Wallrothiella subiculosa	97.95	KR016356
6274	2011	Wamangu	Ficus variegata	14	SH187148.07FU	Xylariaceae	Hypoxylon	Hypoxylon sp	98.76	KR016357
6275	2011	Wamangu	Ficus variegata	134	SH193885.07FU	Sarcosomataceae	Plectania	Plectania sp	92.38	KR016358
6276	2011	Wamangu	Ficus variegata	133	SH013202.07FU	Massarinaceae	Helminthosporium	Helminthosporium sp XXJW 2014a	86.37	KR016359
6282	2011	Wamangu	Ficus variegata	68	SH205619.07FU	Amphisphaeriaceae	Pestalotiopsis	Pestalotiopsis sp	99.8	KR016361
6285	2011	Wamangu	Ficus variegata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.49	KR016362

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6286	2011	Wamangu	Ficus variegata	132	SH193464.07FU	Microascaceae	Scopulariopsis	Scopulariopsis sp A 4 1	85.34	KR016363
6289	2011	Wamangu	Ficus variegata	14	SH187148.07FU	Xylariaceae	Hypoxylon	Hypoxylon sp	98.23	KR016364
6290	2011	Wamangu	Ficus variegata	67	SH193464.07FU	Microascaceae	Scopulariopsis	Scopulariopsis sp A 4 1	88.52	KR016366
6292	2011	Wamangu	Ficus variegata	98	SH195844.07FU	Mycosphaerellaceae	Stenella	Stenella queenslandica	97.63	KR016367
6295	2011	Wamangu	Ficus variegata	131	SH215895.07FU	unidentified	unidentified	Sordariomycetes sp	94.34	KR016368
6297	2011	Wamangu	Ficus variegata	130	SH206774.07FU	Mycosphaerellaceae	Pseudocercospora	Pseudocercospora araliae	98.61	KR016369
6300	2011	Wamangu	Ficus variegata	8	SH375666.07FU	Glomerellaceae	Colletotrichum	Colletotrichum tropicicola	99.18	KR016371
6301	2011	Wamangu	Ficus variegata	109	SH186067.07FU	Xylariaceae	unidentified	Xylariaceae sp	99.8	KR016372
6303	2011	Wamangu	Ficus variegata	67	SH028987.07FU	Ophiocordycipitaceae	Ophiocordyceps	Ophiocordyceps sobolifera	97.22	KR016373
6307	2011	Wamangu	Ficus variegata	84	SH459506.07FU	unidentified	unidentified	Sordariales sp	96.62	KR016374
6309	2011	Wamangu	Ficus variegata	84	SH459506.07FU	unidentified	unidentified	Sordariales sp	96.62	KR016375
6310	2011	Wamangu	Ficus variegata	68	SH205618.07FU	Amphisphaeriaceae	Pestalotiopsis	Pestalotiopsis sp	100	KR016376
6311	2011	Wamangu	Ficus variegata	98	SH014245.07FU	Mycosphaerellaceae	Zasmidium	Zasmidium macluricola	98.28	KR016377
6312	2011	Wamangu	Ficus variegata	73	SH194525.07FU	Mycosphaerellaceae	Zasmidium	Zasmidium sp	97.96	KR016378
6314	2011	Wamangu	Ficus variegata	129	SH389010.07FU	Amphisphaeriaceae	Pestalotiopsis	Pestalotiopsis saprophytica	99.17	KR016379
6315	2011	Wamangu	Ficus variegata	73	SH194525.07FU	Mycosphaerellaceae	Zasmidium	Zasmidium sp	98.38	KR016380
6317	2011	Wamangu	Ficus variegata	107	SH028566.07FU	unidentified	unidentified	fungal sp ZH S13 2 1	97.7	KR016381
6318	2011	Wamangu	Ficus variegata	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016382
6319	2011	Wamangu	Ficus variegata	9	SH198965.07FU	unidentified	unidentified	Ascomycota sp	100	KR016383
6320	2011	Wamangu	Ficus variegata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.59	KR016385
6321	2011	Wamangu	Ficus pungens	42	SH195932.07FU	Xylariaceae	Muscodor	Muscodor sp	99.41	KR016386
6322	2011	Wamangu	Ficus pungens	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016387
6329	2011	Wamangu	Ficus pungens	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.83	KR016388
6332	2011	Wamangu	Ficus pungens	67	SH028987.07FU	Ophiocordycipitaceae	Ophiocordyceps	Ophiocordyceps sobolifera	97.22	KR016390
6336	2011	Wamangu	Ficus pungens	67	SH028987.07FU	Ophiocordycipitaceae	Ophiocordyceps	Ophiocordyceps sobolifera	97.22	KR016391
6340	2011	Wamangu	Ficus pungens	128	SH029592.07FU	unidentified	unidentified	Hypocreales sp	92.59	KR016392
6346	2011	Wamangu	Ficus pungens	67	SH193464.07FU	Microascaceae	Scopulariopsis	Scopulariopsis sp A 4 1	88.24	KR016393
6347	2011	Wamangu	Ficus pungens	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.13	KR016394
6348	2011	Wamangu	Ficus pungens	109	SH186067.07FU	Xylariaceae	unidentified	Xylariaceae sp	99.6	KR016395
6349	2011	Wamangu	Ficus pungens	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016396
6350	2011	Wamangu	Ficus pungens	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.63	KR016397

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6361	2011	Wamangu	Ficus pungens	127	SH032520.07FU	Schizoporaceae	Hyphodontia	Hyphodontia breviseta	100	KR016399
6362	2011	Wamangu	Ficus pungens	126	SH191316.07FU	Sordariaceae	Neurospora	Neurospora terricola	98.21	KR016400
6366	2011	Wamangu	Ficus pungens	125	SH214452.07FU	unidentified	unidentified	Agaricales sp	92.98	KR016401
6369	2011	Wamangu	Ficus pungens	124	SH204046.07FU	unidentified	unidentified	Ascomycota sp	95.97	KR016402
6375	2011	Wamangu	Ficus pungens	67	SH193464.07FU	Microascaceae	Scopulariopsis	Scopulariopsis sp A 4 1	88.56	KR016404
6376	2011	Wamangu	Ficus pungens	67	SH193464.07FU	Microascaceae	Scopulariopsis	Scopulariopsis sp A 4 1	86.38	KR016405
6378	2011	Wamangu	Ficus pungens	88	SH010765.07FU	unidentified	unidentified	Diaporthales sp	88.45	KR016406
6380	2011	Wamangu	Ficus pungens	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.83	KR016408
6384	2011	Wamangu	Ficus variegata	98	SH195844.07FU	Mycosphaerellaceae	Stenella	Stenella queenslandica	97.63	KR016409
6386	2011	Wamangu	Ficus variegata	98	SH195844.07FU	Mycosphaerellaceae	Stenella	Stenella queenslandica	97.63	KR016410
6389	2011	Wamangu	Ficus variegata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	98.41	KR016411
6391	2011	Wamangu	Ficus variegata	98	SH195844.07FU	Mycosphaerellaceae	Stenella	Stenella queenslandica	97.63	KR016413
6393	2011	Wamangu	Ficus variegata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.99	KR016414
6395	2011	Wamangu	Ficus variegata	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016415
6396	2011	Wamangu	Ficus variegata	98	SH195844.07FU	Mycosphaerellaceae	Stenella	Stenella queenslandica	97.63	KR016416
6397	2011	Wamangu	Ficus variegata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.42	KR016417
6406	2011	Wamangu	Ficus variegata	120	SH190983.07FU	Incertae_sedis	unidentified	Hypocreales sp	98.77	KR016419
6408	2011	Wamangu	Ficus variegata	123	SH464266.07FU	unidentified	unidentified	uncultured Basidiomycota	91.63	KR016420
6410	2011	Wamangu	Ficus variegata	122	SH019492.07FU	Incertae_sedis	Exidiopsis	Exidiopsis sp FO 46291	91.59	KR016422
6413	2011	Wamangu	Ficus variegata	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.83	KR016423
6419	2011	Wamangu	Ficus variegata	109	SH186067.07FU	Xylariaceae	unidentified	Xylariaceae sp	100	KR016424
6420	2011	Wamangu	Ficus variegata	121	SH029592.07FU	unidentified	unidentified	Hypocreales sp	93.83	KR016426
6421	2011	Wamangu	Ficus variegata	109	SH186067.07FU	Xylariaceae	unidentified	Xylariaceae sp	99.6	KR016427
6424	2011	Wamangu	Ficus variegata	70	SH413545.07FU	Trichocomaceae	Talaromyces	Talaromyces ruber	99.4	KR016428
6425	2011	Wamangu	Ficus variegata	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.28	KR016429
6427	2011	Wamangu	Ficus variegata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.03	KR016430
6435	2011	Wamangu	Ficus variegata	109	SH186067.07FU	Xylariaceae	unidentified	Xylariaceae sp	99.6	KR016431
6436	2011	Wamangu	Ficus variegata	70	SH413545.07FU	Trichocomaceae	Talaromyces	Talaromyces ruber	99.4	KR016432
6437	2011	Wamangu	Ficus variegata	120	SH190983.07FU	Incertae_sedis	unidentified	Hypocreales sp	98.77	KR016433
6440	2011	Wamangu	Ficus variegata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.02	KR016434
6441	2011	Wamangu	Macaranga aleuritoides	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016435

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6442	2011	Wamangu	Macaranga aleuritoides	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.44	KR016436
6447	2011	Wamangu	Macaranga aleuritoides	56	SH211304.07FU	Halosphaeriaceae	unidentified	Halosphaeriaceae sp	97.29	KR016437
6451	2011	Wamangu	Macaranga aleuritoides	32	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	92.48	KR016439
6456	2011	Wamangu	Macaranga aleuritoides	21	SH185534.07FU	Diaporthaceae	Diaporthe	Diaporthe melonis	98.17	KR016440
6457	2011	Wamangu	Macaranga aleuritoides	119	SH200304.07FU	Sympoventuriaceae	unidentified	Sympoventuriaceae sp	92.92	KR016441
6461	2011	Wamangu	Macaranga aleuritoides	98	SH195844.07FU	Mycosphaerellaceae	Stenella	Stenella queenslandica	99.78	KR016443
6463	2011	Wamangu	Macaranga aleuritoides	118	SH195940.07FU	Xylariaceae	Muscodor	Muscodor albus	96.84	KR016444
6464	2011	Wamangu	Macaranga aleuritoides	117	SH025302.07FU	unidentified	unidentified	Microascales sp	86.71	KR016445
6468	2011	Wamangu	Macaranga aleuritoides	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016446
6469	2011	Wamangu	Macaranga aleuritoides	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.83	KR016447
6470	2011	Wamangu	Macaranga aleuritoides	112	SH198482.07FU	Xylariaceae	unidentified	Xylariaceae sp	99.56	KR016448
6472	2011	Wamangu	Macaranga aleuritoides	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.91	KR016449
6479	2011	Wamangu	Macaranga aleuritoides	117	SH025302.07FU	unidentified	unidentified	Microascales sp	87.01	KR016450
6480	2011	Wamangu	Macaranga aleuritoides	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.65	KR016452
6485	2011	Wamangu	Macaranga aleuritoides	116	SH193905.07FU	Xylariaceae	Xylaria	Xylaria sp WR1	99.6	KR016453
6490	2011	Wamangu	Macaranga aleuritoides	115	SH473002.07FU	Plectosphaerellaceae	Verticillium	Verticillium sp EDT12 16	93.14	KR016454
6497	2011	Wamangu	Macaranga aleuritoides	98	SH195844.07FU	Mycosphaerellaceae	Stenella	Stenella queenslandica	99.78	KR016455
6506	2011	Wamangu	Macaranga bifoveata	113	SH177190.07FU	Incertae_sedis	Scolecobasidium	Scolecobasidium terreum	93.64	KR016457
6509	2011	Wamangu	Macaranga bifoveata	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	97.89	KR016458
6511	2011	Wamangu	Macaranga bifoveata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.88	KR016460
6512	2011	Wamangu	Macaranga bifoveata	67	SH193464.07FU	Microascaceae	Scopulariopsis	Scopulariopsis sp A 4 1	88.24	KR016461
6517	2011	Wamangu	Macaranga bifoveata	41	SH187156.07FU	Xylariaceae	Hypoxylon	Hypoxylon investiens	99.29	KR016462
6520	2011	Wamangu	Macaranga bifoveata	41	SH187156.07FU	Xylariaceae	Hypoxylon	Hypoxylon investiens	99.11	KR016464
6524	2011	Wamangu	Macaranga bifoveata	113	SH177190.07FU	Incertae_sedis	Scolecobasidium	Scolecobasidium terreum	93.64	KR016465
6525	2011	Wamangu	Macaranga bifoveata	14	SH187148.07FU	Xylariaceae	Hypoxylon	Hypoxylon sp	98.41	KR016466
6538	2011	Wamangu	Macaranga bifoveata	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	98.95	KR016468
6542	2011	Wamangu	Macaranga bifoveata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.49	KR016469
6544	2011	Wamangu	Macaranga bifoveata	114	SH211301.07FU	Halosphaeriaceae	unidentified	Halosphaeriaceae sp	96.82	KR016470
6546	2011	Wamangu	Macaranga bifoveata	113	SH177190.07FU	Incertae_sedis	Scolecobasidium	Scolecobasidium terreum	93.64	KR016471
6547	2011	Wamangu	Macaranga bifoveata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.04	KR016472
6548	2011	Wamangu	Macaranga bifoveata	41	SH187156.07FU	Xylariaceae	Hypoxylon	Hypoxylon investiens	99.11	KR016473

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6550	2011	Wamangu	Macaranga bifoveata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.39	KR016474
6551	2011	Wamangu	Macaranga bifoveata	62	SH186265.07FU	Trichocomaceae	Aspergillus	Aspergillus subversicolor	97.75	KR016475
6559	2011	Wamangu	Macaranga bifoveata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.12	KR016476
6562	2011	Wamangu	Psychotria micrococca	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016477
6563	2011	Wamangu	Psychotria micrococca	112	SH198482.07FU	Xylariaceae	unidentified	Xylariaceae sp	99.34	KR016478
6564	2011	Wamangu	Psychotria micrococca	66	SH180176.07FU	Chaetomiaceae	Chaetomium	Chaetomium sp	99.79	KR016479
6566	2011	Wamangu	Psychotria micrococca	111	SH198482.07FU	Xylariaceae	unidentified	Xylariaceae sp	87.7	KR016480
6567	2011	Wamangu	Psychotria micrococca	21	SH200980.07FU	unidentified	unidentified	Ascomycota sp	99.38	KR016481
6569	2011	Wamangu	Psychotria micrococca	109	SH186067.07FU	Xylariaceae	unidentified	Xylariaceae sp	100	KR016482
6573	2011	Wamangu	Psychotria micrococca	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.01	KR016484
6576	2011	Wamangu	Psychotria micrococca	7	SH195657.07FU	Glomerellaceae	unidentified	Glomerellaceae sp	100	KR016485
6578	2011	Wamangu	Psychotria micrococca	69	SH215896.07FU	unidentified	unidentified	Sordariomycetes sp	96.15	KR016486
6579	2011	Wamangu	Psychotria micrococca	69	SH215896.07FU	unidentified	unidentified	Sordariomycetes sp	94.2	KR016487
6580	2011	Wamangu	Psychotria micrococca	32	SH195008.07FU	Xylariaceae	Xylaria	Xylaria sp	97.96	KR016488
6581	2011	Wamangu	Psychotria micrococca	110	SH021019.07FU	unidentified	unidentified	Sordariomycetes sp	90.12	KR016489
6583	2011	Wamangu	Psychotria micrococca	109	SH186067.07FU	Xylariaceae	unidentified	Xylariaceae sp	99.59	KR016490
6584	2011	Wamangu	Psychotria micrococca	109	SH186067.07FU	Xylariaceae	unidentified	Xylariaceae sp	100	KR016491
6585	2011	Wamangu	Psychotria micrococca	73	SH194525.07FU	Mycosphaerellaceae	Zasmidium	Zasmidium sp	99.55	KR016492
6587	2011	Wamangu	Psychotria micrococca	109	SH186067.07FU	Xylariaceae	unidentified	Xylariaceae sp	100	KR016493
6588	2011	Wamangu	Psychotria micrococca	109	SH186067.07FU	Xylariaceae	unidentified	Xylariaceae sp	100	KR016494
6596	2011	Wamangu	Psychotria micrococca	9	SH198965.07FU	unidentified	unidentified	Ascomycota sp	100	KR016495
6597	2011	Wamangu	Psychotria micrococca	109	SH186067.07FU	Xylariaceae	unidentified	Xylariaceae sp	100	KR016496
6599	2011	Wamangu	Psychotria micrococca	109	SH186067.07FU	Xylariaceae	unidentified	Xylariaceae sp	100	KR016497
6600	2011	Wamangu	Psychotria micrococca	109	SH186067.07FU	Xylariaceae	unidentified	Xylariaceae sp	100	KR016499
6601	2011	Wamangu	Psychotria micrococca	109	SH186067.07FU	Xylariaceae	unidentified	Xylariaceae sp	100	KR016500
6603	2011	Wamangu	Psychotria micrococca	9	SH198965.07FU	unidentified	unidentified	Ascomycota sp	100	KR016501
6607	2011	Wamangu	Psychotria micrococca	69	SH215896.07FU	unidentified	unidentified	Sordariomycetes sp	96.37	KR016502
6609	2011	Wamangu	Psychotria micrococca	67	SH028987.07FU	Ophiocordycipitaceae	Ophiocordyceps	Ophiocordyceps sobolifera	97.22	KR016503
6610	2011	Wamangu	Psychotria micrococca	109	SH186067.07FU	Xylariaceae	unidentified	Xylariaceae sp	100	KR016505
6615	2011	Wamangu	Psychotria micrococca	109	SH186067.07FU	Xylariaceae	unidentified	Xylariaceae sp	99.6	KR016506
6620	2011	Wamangu	Psychotria micrococca	109	SH186067.07FU	Xylariaceae	unidentified	Xylariaceae sp	100	KR016508

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6623	2011	Wamangu	Psychotria micrococca	8	SH261145.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nupharicola	99.18	KR016509
6625	2011	Wamangu	Psychotria micrococca	108	SH019813.07FU	Xylariaceae	Xylaria	Xylaria tuberoides	89.15	KR016510
6626	2011	Wamangu	Psychotria micrococca	8	SH251184.07FU	Glomerellaceae	Colletotrichum	Colletotrichum musae	98.97	KR016511
6627	2011	Wamangu	Psychotria micrococca	16	SH207303.07FU	Glomerellaceae	unidentified	Glomerellaceae sp	99.59	KR016512
6628	2011	Wamangu	Psychotria micrococca	8	SH375666.07FU	Glomerellaceae	Colletotrichum	Colletotrichum tropicicola	99.18	KR016513
6631	2011	Wamangu	Psychotria micrococca	8	SH261145.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nupharicola	99.18	KR016515
6632	2011	Wamangu	Psychotria micrococca	69	SH215896.07FU	unidentified	unidentified	Sordariomycetes sp	95.5	KR016516
6635	2011	Wamangu	Psychotria micrococca	8	SH195649.07FU	Glomerellaceae	Colletotrichum	Colletotrichum xanthorrhoeae	98.14	KR016517
6636	2011	Wamangu	Psychotria micrococca	7	SH195657.07FU	Glomerellaceae	unidentified	Glomerellaceae sp	100	KR016518
6638	2011	Wamangu	Psychotria micrococca	8	SH375666.07FU	Glomerellaceae	Colletotrichum	Colletotrichum tropicicola	99.18	KR016519
6641	2011	Wamangu	Psychotria micrococca	8	SH195649.07FU	Glomerellaceae	Colletotrichum	Colletotrichum xanthorrhoeae	98.76	KR016520
6642	2011	Wamangu	Psychotria micrococca	8	SH251184.07FU	Glomerellaceae	Colletotrichum	Colletotrichum musae	99.18	KR016521
6643	2011	Wamangu	Psychotria micrococca	8	SH261145.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nupharicola	99.18	KR016522
6645	2011	Wamangu	Psychotria micrococca	8	SH261145.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nupharicola	99.38	KR016523
6646	2011	Wamangu	Psychotria micrococca	107	SH215897.07FU	Incertae_sedis	Ophiognomonia	Ophiognomonia sp CBP23C	96.2	KR016524
6647	2011	Wamangu	Psychotria micrococca	8	SH375666.07FU	Glomerellaceae	Colletotrichum	Colletotrichum tropicicola	99.79	KR016525
6648	2011	Wamangu	Psychotria micrococca	105	SH194844.07FU	unidentified	unidentified	Sordariomycetes sp	97.7	KR016526
6649	2011	Wamangu	Psychotria micrococca	9	SH198965.07FU	unidentified	unidentified	Ascomycota sp	100	KR016527
6650	2011	Wamangu	Psychotria micrococca	16	SH207303.07FU	Glomerellaceae	unidentified	Glomerellaceae sp	98.55	KR016529
6654	2011	Wamangu	Psychotria micrococca	67	SH028987.07FU	Ophiocordycipitaceae	Ophiocordyceps	Ophiocordyceps sobolifera	97.22	KR016530
6656	2011	Wamangu	Psychotria micrococca	106	SH205495.07FU	unidentified	unidentified	Diaporthales sp	98	KR016531
6660	2011	Wamangu	Psychotria micrococca	8	SH375666.07FU	Glomerellaceae	Colletotrichum	Colletotrichum tropicicola	98.97	KR016532
6661	2011	Wamangu	Psychotria micrococca	4	SH195663.07FU	Glomerellaceae	Colletotrichum	Colletotrichum sp IP 43	98.16	KR016533
6662	2011	Wamangu	Psychotria micrococca	8	SH375666.07FU	Glomerellaceae	Colletotrichum	Colletotrichum tropicicola	99.18	KR016534
6663	2011	Wamangu	Psychotria micrococca	105	SH194844.07FU	unidentified	unidentified	Sordariomycetes sp	97.7	KR016535
6666	2011	Wamangu	Psychotria micrococca	8	SH375666.07FU	Glomerellaceae	Colletotrichum	Colletotrichum tropicicola	99.18	KR016536
6669	2011	Wamangu	Psychotria micrococca	9	SH198965.07FU	unidentified	unidentified	Ascomycota sp	100	KR016537
6670	2011	Wamangu	Psychotria micrococca	8	SH195649.07FU	Glomerellaceae	Colletotrichum	Colletotrichum xanthorrhoeae	98.4	KR016539
6672	2011	Wamangu	Psychotria micrococca	7	SH195657.07FU	Glomerellaceae	unidentified	Glomerellaceae sp	98.89	KR016540
6673	2011	Wamangu	Psychotria micrococca	13	SH198541.07FU	unidentified	unidentified	Polyporales sp	99.29	KR016541
6677	2011	Wamangu	Psychotria micrococca	32	SH195008.07FU	Xylariaceae	Xylaria	Xylaria sp	97.97	KR016542

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6682	2011	Wamangu	Macaranga aleuritoides	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.3	KR016543
6684	2011	Wamangu	Macaranga aleuritoides	104	SH194350.07FU	Xylariaceae	Xylaria	Xylaria sp 9 GDS 2013	97.61	KR016544
6686	2011	Wamangu	Macaranga aleuritoides	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016545
6691	2011	Wamangu	Macaranga aleuritoides	103	SH195849.07FU	Euantennariaceae	Rasutoria	Rasutoria tsugae	94.67	KR016547
6695	2011	Wamangu	Macaranga aleuritoides	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016548
6696	2011	Wamangu	Macaranga aleuritoides	98	SH195844.07FU	Mycosphaerellaceae	Stenella	Stenella queenslandica	99.78	KR016549
6698	2011	Wamangu	Macaranga aleuritoides	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016550
6699	2011	Wamangu	Macaranga aleuritoides	66	SH180176.07FU	Chaetomiaceae	Chaetomium	Chaetomium sp	99.79	KR016551
6701	2011	Wamangu	Macaranga aleuritoides	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.83	KR016554
6703	2011	Wamangu	Macaranga aleuritoides	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016555
6704	2011	Wamangu	Macaranga aleuritoides	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.82	KR016556
6710	2011	Wamangu	Macaranga aleuritoides	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	98.71	KR016557
6735	2011	Wamangu	Macaranga aleuritoides	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.65	KR016559
6741	2011	Wamangu	Ficus variegata	102	SH181550.07FU	unidentified	unidentified	Sordariomycetes sp	96.62	KR016561
6742	2011	Wamangu	Ficus variegata	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016562
6743	2011	Wamangu	Ficus variegata	101	SH026230.07FU	unidentified	unidentified	Sordariomycetes sp	90.94	KR016563
6744	2011	Wamangu	Ficus variegata	21	SH185534.07FU	Diaporthaceae	Diaporthe	Diaporthe melonis	97.76	KR016564
6745	2011	Wamangu	Ficus variegata	8	SH375666.07FU	Glomerellaceae	Colletotrichum	Colletotrichum tropicicola	99.79	KR016565
6746	2011	Wamangu	Ficus variegata	100	SH186930.07FU	unidentified	unidentified	Pleosporales sp	99.63	KR016566
6747	2011	Wamangu	Ficus variegata	99	SH029117.07FU	unidentified	unidentified	fungal sp A220	93.64	KR016567
6748	2011	Wamangu	Ficus variegata	91	SH122638.07FU	Botryosphaeriaceae	Lasiodiplodia	Lasiodiplodia margaritacea	98.93	KR016568
6750	2011	Wamangu	Ficus variegata	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.82	KR016569
6752	2011	Wamangu	Ficus variegata	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	98.72	KR016570
6753	2011	Wamangu	Ficus variegata	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016571
6754	2011	Wamangu	Ficus variegata	8	SH195649.07FU	Glomerellaceae	Colletotrichum	Colletotrichum xanthorrhoeae	98.6	KR016572
6755	2011	Wamangu	Ficus variegata	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016573
6758	2011	Wamangu	Ficus variegata	98	SH195844.07FU	Mycosphaerellaceae	Stenella	Stenella queenslandica	99.57	KR016574
6760	2011	Wamangu	Ficus variegata	8	SH195649.07FU	Glomerellaceae	Colletotrichum	Colletotrichum xanthorrhoeae	98.6	KR016576
6761	2011	Wamangu	Ficus variegata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.05	KR016577
6762	2011	Wamangu	Ficus variegata	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016578
6763	2011	Wamangu	Ficus variegata	73	SH194525.07FU	Mycosphaerellaceae	Zasmidium	Zasmidium sp	99.55	KR016579

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6767	2011	Wamangu	Ficus variegata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.31	KR016580
6768	2011	Wamangu	Ficus variegata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.09	KR016581
6769	2011	Wamangu	Ficus variegata	84	SH459506.07FU	unidentified	unidentified	Sordariales sp	96.62	KR016582
6770	2011	Wamangu	Ficus variegata	66	SH180176.07FU	Chaetomiaceae	Chaetomium	Chaetomium sp	99.79	KR016584
6780	2011	Wamangu	Ficus variegata	9	SH198965.07FU	unidentified	unidentified	Ascomycota sp	99.82	KR016586
6784	2011	Wamangu	Ficus variegata	97	SH221427.07FU	unidentified	unidentified	Ascomycota sp	97.83	KR016587
6792	2011	Wamangu	Ficus variegata	8	SH375666.07FU	Glomerellaceae	Colletotrichum	Colletotrichum tropicicola	98.97	KR016589
6796	2011	Wamangu	Ficus variegata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.6	KR016590
6798	2011	Wamangu	Ficus variegata	96	SH177636.07FU	unidentified	unidentified	Sordariomycetes sp	97.41	KR016591
6803	2011	Wamangu	Macaranga fallacina	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.83	KR016593
6804	2011	Wamangu	Macaranga fallacina	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.39	KR016594
6805	2011	Wamangu	Macaranga fallacina	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016595
6806	2011	Wamangu	Macaranga fallacina	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016596
6808	2011	Wamangu	Macaranga fallacina	56	SH211304.07FU	Halosphaeriaceae	unidentified	Halosphaeriaceae sp	99.81	KR016597
6809	2011	Wamangu	Macaranga fallacina	42	SH195932.07FU	Xylariaceae	Muscodor	Muscodor sp	99.41	KR016598
6810	2011	Wamangu	Macaranga fallacina	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.42	KR016600
6811	2011	Wamangu	Macaranga fallacina	95	SH217390.07FU	Xylariaceae	Xylaria	Xylaria sp	97.98	KR016601
6812	2011	Wamangu	Macaranga fallacina	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.28	KR016602
6814	2011	Wamangu	Macaranga fallacina	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	97.68	KR016603
6815	2011	Wamangu	Macaranga fallacina	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	97.38	KR016604
6816	2011	Wamangu	Macaranga fallacina	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.82	KR016605
6821	2011	Wamangu	Macaranga fallacina	31	SH188258.07FU	unidentified	unidentified	Agaricomycetes sp	99.25	KR016607
6826	2011	Wamangu	Macaranga fallacina	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.25	KR016608
6827	2011	Wamangu	Macaranga fallacina	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.11	KR016609
6841	2011	Wamangu	Macaranga fallacina	15	SH127904.07FU	Davidiellaceae	Cladosporium	Cladosporium dominicanum	99.79	KR016611
6851	2011	Wamangu	Macaranga fallacina	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016612
6853	2011	Wamangu	Macaranga fallacina	32	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	92.36	KR016613
6855	2011	Wamangu	Macaranga fallacina	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016614
6857	2011	Wamangu	Macaranga fallacina	94	SH211305.07FU	Halosphaeriaceae	unidentified	Halosphaeriaceae sp	99.04	KR016615
6858	2011	Wamangu	Macaranga fallacina	32	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	92.38	KR016616
6860	2011	Wamangu	Macaranga fallacina	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.43	KR016617

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6864	2011	Wamangu	Macaranga fallacina	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.83	KR016618
6867	2011	Wamangu	Macaranga fallacina	93	SH190626.07FU	Cryphonectriaceae	Endothia	Endothia gyrosa	87.03	KR016619
6868	2011	Wamangu	Macaranga fallacina	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.48	KR016620
6870	2011	Wamangu	Macaranga fallacina	92	SH219156.07FU	Xylariaceae	Hypoxylon	Hypoxylon haematostroma	100	KR016622
6873	2011	Wamangu	Macaranga fallacina	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.83	KR016623
6877	2011	Wamangu	Macaranga fallacina	91	SH122638.07FU	Botryosphaeriaceae	Lasiodiplodia	Lasiodiplodia margaritacea	98.51	KR016624
6880	2011	Wamangu	Macaranga fallacina	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.37	KR016625
6882	2011	Wamangu	Macaranga fallacina	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.28	KR016626
6885	2011	Wamangu	Macaranga fallacina	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016627
6890	2011	Wamangu	Macaranga fallacina	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	97.12	KR016628
6891	2011	Wamangu	Macaranga fallacina	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.83	KR016629
6893	2011	Wamangu	Macaranga fallacina	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.43	KR016630
6894	2011	Wamangu	Macaranga fallacina	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.79	KR016631
6895	2011	Wamangu	Macaranga fallacina	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.88	KR016632
6897	2011	Wamangu	Macaranga fallacina	9	SH198965.07FU	unidentified	unidentified	Ascomycota sp	100	KR016633
6898	2011	Wamangu	Macaranga fallacina	90	SH020789.07FU	Pseudoplagiostomataceae	Pseudoplagiostoma	Pseudoplagiostoma sp	88.51	KR016634
6899	2011	Wamangu	Macaranga fallacina	67	SH028987.07FU	Ophiocordycipitaceae	Ophiocordyceps	Ophiocordyceps sobolifera	97.22	KR016635
6900	2011	Wamangu	Macaranga fallacina	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016637
6901	2011	Wamangu	Macaranga fallacina	89	SH181515.07FU	unidentified	unidentified	Sordariomycetes sp	97.6	KR016638
6903	2011	Wamangu	Macaranga fallacina	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016639
6905	2011	Wamangu	Macaranga fallacina	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.48	KR016640
6906	2011	Wamangu	Macaranga fallacina	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.83	KR016641
6907	2011	Wamangu	Macaranga fallacina	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016642
6912	2011	Wamangu	Macaranga fallacina	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016643
6922	2011	Wamangu	Ficus pungens	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016644
6923	2011	Wamangu	Ficus pungens	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.65	KR016645
6928	2011	Wamangu	Ficus pungens	42	SH195939.07FU	Xylariaceae	Muscodor	Muscodor yucatanensis	97.45	KR016646
6935	2011	Wamangu	Ficus pungens	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016647
6942	2011	Wamangu	Ficus pungens	88	SH010765.07FU	unidentified	unidentified	Diaporthales sp	88.45	KR016648
6943	2011	Wamangu	Ficus pungens	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016649
6944	2011	Wamangu	Ficus pungens	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.65	KR016650

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6945	2011	Wamangu	Ficus pungens	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.58	KR016651
6946	2011	Wamangu	Ficus pungens	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.01	KR016652
6947	2011	Wamangu	Ficus pungens	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	98.01	KR016653
6948	2011	Wamangu	Ficus pungens	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.45	KR016654
6949	2011	Wamangu	Ficus pungens	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.09	KR016655
6955	2011	Wamangu	Ficus pungens	67	SH028987.07FU	Ophiocordycipitaceae	Ophiocordyceps	Ophiocordyceps sobolifera	97.22	KR016656
6956	2011	Wamangu	Ficus pungens	32	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	92.28	KR016657
6958	2011	Wamangu	Ficus pungens	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.03	KR016658
6960	2011	Wamangu	Ficus pungens	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.3	KR016659
6961	2011	Wamangu	Ficus pungens	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.83	KR016660
6962	2011	Wamangu	Ficus pungens	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016661
6964	2011	Wamangu	Ficus pungens	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.98	KR016662
6966	2011	Wamangu	Ficus pungens	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016663
6967	2011	Wamangu	Ficus pungens	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.83	KR016664
6968	2011	Wamangu	Ficus pungens	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.65	KR016665
6969	2011	Wamangu	Ficus pungens	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.48	KR016666
6970	2011	Wamangu	Ficus pungens	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016668
6973	2011	Wamangu	Ficus pungens	48	SH187150.07FU	Xylariaceae	Hypoxylon	Hypoxylon sp LC06	97.65	KR016669
6975	2011	Wamangu	Ficus pungens	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016670
6976	2011	Wamangu	Ficus pungens	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.19	KR016671
6977	2011	Wamangu	Ficus pungens	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.63	KR016672
6978	2011	Wamangu	Ficus pungens	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016673
6979	2011	Wamangu	Ficus pungens	9	SH198965.07FU	unidentified	unidentified	Ascomycota sp	100	KR016674
6980	2011	Wamangu	Ficus pungens	32	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	92.39	KR016676
6982	2011	Wamangu	Syzygium longipes	84	SH459506.07FU	unidentified	unidentified	Sordariales sp	96.62	KR016677
6983	2011	Wamangu	Syzygium longipes	87	SH213852.07FU	Melanconidaceae	Melanconiella	Melanconiella ellisii	84.18	KR016678
6984	2011	Wamangu	Syzygium longipes	86	SH194907.07FU	Amphisphaeriaceae	unidentified	Amphisphaeriaceae sp	84.45	KR016679
6989	2011	Wamangu	Syzygium longipes	9	SH198965.07FU	unidentified	unidentified	Ascomycota sp	96.8	KR016680
6991	2011	Wamangu	Syzygium longipes	85	SH022540.07FU	unidentified	unidentified	Sordariomycetes sp	90.96	KR016682
6992	2011	Wamangu	Syzygium longipes	9	SH198965.07FU	unidentified	unidentified	Ascomycota sp	100	KR016683
6994	2011	Wamangu	Syzygium longipes	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.02	KR016684

endophyte number	year	site	host species	MOTU	UNITE Species	family	genus	species	pident	genbank accession
6996	2011	Wamangu	Syzygium longipes	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016685
6997	2011	Wamangu	Syzygium longipes	32	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	92.23	KR016686
6998	2011	Wamangu	Syzygium longipes	27	SH197058.07FU	Polyporaceae	Trametes	Trametes maxima	99.82	KR016687
6999	2011	Wamangu	Syzygium longipes	32	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	92.08	KR016688
7000	2011	Wamangu	Syzygium longipes	48	SH187150.07FU	Xylariaceae	Hypoxylon	Hypoxylon sp LC06	97.83	KR016690
7002	2011	Wamangu	Syzygium longipes	84	SH459506.07FU	unidentified	unidentified	Sordariales sp	96.41	KR016691
7004	2011	Wamangu	Syzygium longipes	66	SH180176.07FU	Chaetomiaceae	Chaetomium	Chaetomium sp	99.79	KR016692
7006	2011	Wamangu	Syzygium longipes	73	SH194525.07FU	Mycosphaerellaceae	Zasmidium	Zasmidium sp	98.64	KR016693
7011	2011	Wamangu	Syzygium longipes	29	SH192878.07FU	Hymenochaetaceae	Phellinus	Phellinus noxius	98.86	KR016694
7015	2011	Wamangu	Syzygium longipes	9	SH198965.07FU	unidentified	unidentified	Ascomycota sp	100	KR016695
7016	2011	Wamangu	Syzygium longipes	83	SH017310.07FU	unidentified	unidentified	leaf litter ascomycete strain its269	88.11	KR016696
7017	2011	Wamangu	Syzygium longipes	4	SH195663.07FU	Glomerellaceae	Colletotrichum	Colletotrichum sp IP 43	98.57	KR016697
7018	2011	Wamangu	Syzygium longipes	16	SH207303.07FU	Glomerellaceae	unidentified	Glomerellaceae sp	99.39	KR016698
7019	2011	Wamangu	Syzygium longipes	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.98	KR016699
7021	2011	Wamangu	Syzygium longipes	4	SH195663.07FU	Glomerellaceae	Colletotrichum	Colletotrichum sp IP 43	98.57	KR016700
7023	2011	Wamangu	Syzygium longipes	67	SH193464.07FU	Microascaceae	Scopulariopsis	Scopulariopsis sp A 4 1	88.24	KR016701
7024	2011	Wamangu	Syzygium longipes	31	SH188258.07FU	unidentified	unidentified	Agaricomycetes sp	99.43	KR016702
7025	2011	Wamangu	Syzygium longipes	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.41	KR016703
7027	2011	Wamangu	Syzygium longipes	32	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	92.47	KR016704
7033	2011	Wamangu	Syzygium longipes	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016705
7034	2011	Wamangu	Syzygium longipes	9	SH198965.07FU	unidentified	unidentified	Ascomycota sp	100	KR016706
7035	2011	Wamangu	Syzygium longipes	73	SH194525.07FU	Mycosphaerellaceae	Zasmidium	Zasmidium sp	98.42	KR016707
7036	2011	Wamangu	Syzygium longipes	8	SH375666.07FU	Glomerellaceae	Colletotrichum	Colletotrichum tropicicola	99.38	KR016708
7038	2011	Wamangu	Syzygium longipes	4	SH195663.07FU	Glomerellaceae	Colletotrichum	Colletotrichum sp IP 43	98.57	KR016709
7039	2011	Wamangu	Syzygium longipes	68	SH205618.07FU	Amphisphaeriaceae	Pestalotiopsis	Pestalotiopsis sp	100	KR016710
7040	2011	Wamangu	Syzygium longipes	8	SH195649.07FU	Glomerellaceae	Colletotrichum	Colletotrichum xanthorrhoeae	98.8	KR016711
7042	2011	Wamangu	Ficus hahliana	36	SH195036.07FU	Xylariaceae	Nemania	Nemania primolutea	99.8	KR016712
7043	2011	Wamangu	Ficus hahliana	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.05	KR016713
7044	2011	Wamangu	Ficus hahliana	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016714
7045	2011	Wamangu	Ficus hahliana	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	98.24	KR016715
7046	2011	Wamangu	Ficus hahliana	82	SH027727.07FU	Trichocomaceae	Paecilomyces	Paecilomyces lilacinus	96.53	KR016716

endophyte number	year	site	host species	MOTU	UNITE Species	family	genus	species	pident	genbank accession
7047	2011	Wamangu	Ficus hahliana	44	SH176593.07FU	Xylariaceae	unidentified	Xylariaceae sp	99.79	KR016717
7048	2011	Wamangu	Ficus hahliana	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016718
7049	2011	Wamangu	Ficus hahliana	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	97.44	KR016719
7051	2011	Wamangu	Ficus hahliana	36	SH195036.07FU	Xylariaceae	Nemania	Nemania primolutea	100	KR016720
7054	2011	Wamangu	Ficus hahliana	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	98.89	KR016721
7055	2011	Wamangu	Ficus hahliana	32	SH195008.07FU	Xylariaceae	Xylaria	Xylaria sp	97.77	KR016722
7058	2011	Wamangu	Ficus hahliana	81	SH028981.07FU	Xylariaceae	unidentified	Xylariaceae sp VegaE1 89	89.46	KR016723
7060	2011	Wamangu	Ficus hahliana	81	SH028981.07FU	Xylariaceae	unidentified	Xylariaceae sp VegaE1 89	89.46	KR016724
7062	2011	Wamangu	Ficus hahliana	80	SH460136.07FU	Teratosphaeriaceae	Catenulostroma	Catenulostroma corymbiae	96.81	KR016725
7064	2011	Wamangu	Ficus hahliana	79	SH181421.07FU	unidentified	unidentified	Pleosporales sp	99.16	KR016726
7066	2011	Wamangu	Ficus hahliana	56	SH211304.07FU	Halosphaeriaceae	unidentified	Halosphaeriaceae sp	96.56	KR016727
7067	2011	Wamangu	Ficus hahliana	67	SH193464.07FU	Microascaceae	Scopulariopsis	Scopulariopsis sp A 4 1	88.24	KR016728
7068	2011	Wamangu	Ficus hahliana	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	98.78	KR016729
7069	2011	Wamangu	Ficus hahliana	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016730
7072	2011	Wamangu	Ficus hahliana	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.86	KR016731
7077	2011	Wamangu	Ficus hahliana	67	SH028987.07FU	Ophiocordycipitaceae	Ophiocordyceps	Ophiocordyceps sobolifera	97.22	KR016732
7078	2011	Wamangu	Ficus hahliana	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.82	KR016733
7079	2011	Wamangu	Ficus hahliana	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016734
7081	2011	Wamangu	Ficus hahliana	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016735
7084	2011	Wamangu	Ficus hahliana	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.88	KR016736
7085	2011	Wamangu	Ficus hahliana	41	SH187156.07FU	Xylariaceae	Hypoxylon	Hypoxylon investiens	98.83	KR016737
7091	2011	Wamangu	Ficus hahliana	78	SH193464.07FU	Microascaceae	Scopulariopsis	Scopulariopsis sp A 4 1	85.34	KR016739
7092	2011	Wamangu	Ficus hahliana	77	SH211308.07FU	unidentified	unidentified	Sordariomycetes sp	94.38	KR016740
7093	2011	Wamangu	Ficus hahliana	67	SH028987.07FU	Ophiocordycipitaceae	Ophiocordyceps	Ophiocordyceps sobolifera	97.22	KR016741
7095	2011	Wamangu	Ficus hahliana	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016742
7097	2011	Wamangu	Ficus hahliana	32	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	92.27	KR016743
7102	2011	Wamangu	Macaranga fallacina	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.83	KR016746
7103	2011	Wamangu	Macaranga fallacina	37	SH190216.07FU	Trichocomaceae	Penicillium	Penicillium steckii	100	KR016747
7104	2011	Wamangu	Macaranga fallacina	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.39	KR016748
7107	2011	Wamangu	Macaranga fallacina	76	SH201133.07FU	Phanerochaetaceae	Phanerochaete	Phanerochaete sordida	95.21	KR016749
7109	2011	Wamangu	Macaranga fallacina	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016750

endophyte number	year	site	host species	MOTU	UNITE Species	family	genus	species	pident	genbank accession
7115	2011	Wamangu	Macaranga fallacina	75	SH206719.07FU	Trichocomaceae	Paecilomyces	Paecilomyces sp	98.62	KR016751
7117	2011	Wamangu	Macaranga fallacina	15	SH127904.07FU	Davidiellaceae	Cladosporium	Cladosporium dominicanum	100	KR016752
7118	2011	Wamangu	Macaranga fallacina	21	SH185534.07FU	Diaporthaceae	Diaporthe	Diaporthe melonis	97.96	KR016753
7119	2011	Wamangu	Macaranga fallacina	70	SH119577.07FU	Trichocomaceae	Talaromyces	Talaromyces pinophilus	97.47	KR016754
7121	2011	Wamangu	Macaranga fallacina	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016756
7122	2011	Wamangu	Macaranga fallacina	74	SH175168.07FU	unidentified	unidentified	Agaricomycetes sp	99.63	KR016757
7124	2011	Wamangu	Macaranga fallacina	21	SH200980.07FU	unidentified	unidentified	Ascomycota sp	99.38	KR016758
7132	2011	Wamangu	Macaranga fallacina	5	SH190215.07FU	Trichocomaceae	Penicillium	Penicillium citrinum	100	KR016760
7134	2011	Wamangu	Macaranga fallacina	8	SH261145.07FU	Glomerellaceae	Colletotrichum	Colletotrichum nupharicola	99.15	KR016761
7135	2011	Wamangu	Macaranga fallacina	70	SH413545.07FU	Trichocomaceae	Talaromyces	Talaromyces ruber	99.4	KR016762
7138	2011	Wamangu	Macaranga fallacina	5	SH190215.07FU	Trichocomaceae	Penicillium	Penicillium citrinum	100	KR016763
7142	2011	Wamangu	Macaranga fallacina	5	SH190215.07FU	Trichocomaceae	Penicillium	Penicillium citrinum	100	KR016765
7143	2011	Wamangu	Macaranga fallacina	5	SH190215.07FU	Trichocomaceae	Penicillium	Penicillium citrinum	100	KR016766
7144	2011	Wamangu	Macaranga fallacina	5	SH190215.07FU	Trichocomaceae	Penicillium	Penicillium citrinum	100	KR016767
7145	2011	Wamangu	Macaranga fallacina	5	SH190215.07FU	Trichocomaceae	Penicillium	Penicillium citrinum	100	KR016768
7146	2011	Wamangu	Macaranga fallacina	5	SH190215.07FU	Trichocomaceae	Penicillium	Penicillium citrinum	100	KR016769
7147	2011	Wamangu	Macaranga fallacina	5	SH190215.07FU	Trichocomaceae	Penicillium	Penicillium citrinum	100	KR016770
7148	2011	Wamangu	Macaranga fallacina	73	SH194525.07FU	Mycosphaerellaceae	Zasmidium	Zasmidium sp	99.55	KR016771
7149	2011	Wamangu	Macaranga fallacina	5	SH190215.07FU	Trichocomaceae	Penicillium	Penicillium citrinum	100	KR016772
7152	2011	Wamangu	Macaranga fallacina	5	SH190215.07FU	Trichocomaceae	Penicillium	Penicillium citrinum	100	KR016773
7153	2011	Wamangu	Macaranga fallacina	5	SH190215.07FU	Trichocomaceae	Penicillium	Penicillium citrinum	100	KR016774
7155	2011	Wamangu	Macaranga fallacina	5	SH190215.07FU	Trichocomaceae	Penicillium	Penicillium citrinum	100	KR016775
7156	2011	Wamangu	Macaranga fallacina	5	SH190215.07FU	Trichocomaceae	Penicillium	Penicillium citrinum	100	KR016776
7157	2011	Wamangu	Macaranga fallacina	5	SH190215.07FU	Trichocomaceae	Penicillium	Penicillium citrinum	100	KR016777
7161	2011	Wanang	Ficus pungens	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97.54	KR016779
7162	2011	Wanang	Ficus pungens	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.84	KR016780
7163	2011	Wanang	Ficus pungens	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.86	KR016781
7166	2011	Wanang	Ficus pungens	70	SH282916.07FU	Trichocomaceae	Talaromyces	Talaromyces amestolkiae	100	KR016782
7193	2011	Wanang	Ficus variegata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	97	KR016785
7194	2011	Wanang	Ficus variegata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.98	KR016786
7197	2011	Wanang	Psychotria leptothyrsa	72	SH457980.07FU	Incertae_sedis	Scolecobasidium	Scolecobasidium tshawytschae	85.56	KR016787

endophyte number	year	site	host species	MOTU	UNITE Species	family	genus	species	pident	genbank accession
7198	2011	Wanang	Ficus variegata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.91	KR016788
7199	2011	Wanang	Macaranga punctata	40	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	92.98	KR016789
7200	2011	Wanang	Macaranga punctata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.88	KR016790
7201	2011	Wanang	Macaranga fallacina	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.68	KR016791
7202	2011	Wanang	Psychotria micrococca	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.51	KR016792
7203	2011	Wanang	Macaranga punctata	40	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	93.13	KR016793
7204	2011	Wanang	Macaranga punctata	6	SH209687.07FU	unidentified	unidentified	Sordariomycetes sp	96.88	KR016794
7205	2011	Wanang	Syzygium longipes	7	SH195657.07FU	Glomerellaceae	unidentified	Glomerellaceae sp	98.89	KR016795
7206	2011	Wanang	Psychotria micrococca	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016796
7207	2011	Ohu	Psychotria micrococca	71	SH215896.07FU	unidentified	unidentified	Sordariomycetes sp	98.67	KR016797
7210	2011	Ohu	Psychotria micrococca	8	SH375666.07FU	Glomerellaceae	Colletotrichum	Colletotrichum tropicicola	99.18	KR016798
7213	2011	Wanang	Psychotria micrococca	8	SH375666.07FU	Glomerellaceae	Colletotrichum	Colletotrichum tropicicola	99.18	KR016799
7214	2011	Wanang	Psychotria micrococca	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	99.83	KR016800
7215	2011	Wanang	Psychotria micrococca	70	SH282916.07FU	Trichocomaceae	Talaromyces	Talaromyces amestolkiae	100	KR016801
7217	2011	Wanang	Syzygium longipes	12	SH200163.07FU	Hyponectriaceae	Beltraniella	Beltraniella sp	96.74	KR016802
7218	2011	Wanang	Psychotria micrococca	66	SH180176.07FU	Chaetomiaceae	Chaetomium	Chaetomium sp	99.79	KR016803
7219	2011	Wanang	Syzygium longipes	70	SH282916.07FU	Trichocomaceae	Talaromyces	Talaromyces amestolkiae	100	KR016804
7221	2011	Ohu	Ficus variegata	70	SH282916.07FU	Trichocomaceae	Talaromyces	Talaromyces amestolkiae	100	KR016805
7222	2011	Ohu	Psychotria micrococca	66	SH180176.07FU	Chaetomiaceae	Chaetomium	Chaetomium sp	99.79	KR016806
7226	2011	Ohu	Ficus pungens	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016807
7226	2011	Ohu	Ficus pungens	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016807
7226	2011	Wanang	Psychotria micrococca	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016807
7226	2011	Wanang	Psychotria micrococca	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016807
7227	2011	Ohu	Syzygium longipes	69	SH215896.07FU	unidentified	unidentified	Sordariomycetes sp	95.97	KR016808
7228	2011	Ohu	Syzygium longipes	66	SH180176.07FU	Chaetomiaceae	Chaetomium	Chaetomium sp	99.79	KR016809
7231	2011	Wamangu	Syzygium longipes	68	SH205619.07FU	Amphisphaeriaceae	Pestalotiopsis	Pestalotiopsis sp	99.8	KR016811
7232	2011	Wamangu	Syzygium longipes	9	SH198965.07FU	unidentified	unidentified	Ascomycota sp	100	KR016812
7233	2011	Wamangu	Syzygium longipes	9	SH198965.07FU	unidentified	unidentified	Ascomycota sp	100	KR016813
7234	2011	Wamangu	Syzygium longipes	9	SH198965.07FU	unidentified	unidentified	Ascomycota sp	100	KR016814
7235	2011	Wamangu	Syzygium longipes	66	SH180176.07FU	Chaetomiaceae	Chaetomium	Chaetomium sp	99.79	KR016815
7339	2011	Wamangu	Ficus hahliana	67	SH028987.07FU	Ophiocordycipitaceae	Ophiocordyceps	Ophiocordyceps sobolifera	97.22	KR016820

endophyte number	year	site	host species	MOTU	UNITE Species	family	genus	species	pident	genbank accession
7340	2011	Wamangu	Syzygium longipes	65	SH025295.07FU	unidentified	unidentified	Microascales sp	96.77	KR016821
7343	2011	Wamangu	Macaranga bifoveata	6	SH195017.07FU	Xylariaceae	Xylaria	Xylaria sp M98 4	100	KR016822
7344	2011	Wamangu	Macaranga aleuritoides	21	SH185534.07FU	Diaporthaceae	Diaporthe	Diaporthe melonis	98.17	KR016823
7345	2011	Wamangu	Psychotria micrococca	9	SH198965.07FU	unidentified	unidentified	Ascomycota sp	100	KR016824
7347	2011	Wamangu	Psychotria micrococca	66	SH180176.07FU	Chaetomiaceae	Chaetomium	Chaetomium sp	99.79	KR016825
7350	2011	Wamangu	Ficus variegata	8	SH375666.07FU	Glomerellaceae	Colletotrichum	Colletotrichum tropicicola	98.97	KR016827
7351	2011	Wamangu	Syzygium longipes	9	SH198965.07FU	unidentified	unidentified	Ascomycota sp	100	KR016828
7353	2011	Wamangu	Syzygium longipes	65	SH025295.07FU	unidentified	unidentified	Microascales sp	96.69	KR016829

Appendix 5

Results of mantel test results for correlation between endophyte community composition and distance between sampled trees at Wanang in 2010. Significance tests for the calculated Pearson correlations were constructed with 999 permutations of the Bray-Curtis matrix. We tested for this relationship between all sampled trees, congeners and conspecifics.

Appendix 5

host group	p	r
All trees	0.716	-0.024
Ficus	0.837	-0.086
Macaranga	0.443	0.013
Ficus hahliana	0.504	0.013
Ficus pungens	0.654	-0.120
Ficus variegata	0.905	-0.332
Macaranga bifoveata	0.832	-0.229
Macaranga falacina	0.251	0.158
Macaranga punctata	0.089	0.416
Gnetum gnemon	0.091	0.439
Syzygium longipes	0.802	-0.22