IJM - Italian Journal of Mycology
ISSN 2531-7342 - Vol. 55 (2026): 47 - 61
Journal homepage: https://italianmycology.unibo.it/

Research article

Saprotrophic macrofungi in lowland dipterocarp forests of Mt. Siburan and Mt. Malasimbo, Mindoro Island, Philippines

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ARTICLE INFO
Received 24/10/2025; accepted 02/05/2026
https://doi.org/10.60923/issn.2531-7342/23007

Abstract
Mindoro island is one of the major terrestrial biogeographic regions in the Philippines, yet studies on their macrofungi remained lacking. A field-based survey of macrofungi in two lowland dipterocarp-dominated forest sites in Mindoro Island was carried out. A total of 122 specimens were collected, and these were identified by conventional morphometric analysis and molecular methods as belonging to Ascomycota with two genera and Basidiomycota with 21 genera. We recorded 17 species in Mt. Malasimbo and 25 species in Mt. Siburan. The identified macrofungi belong to the following genera ─ *Agaricus*, *Auricularia*, *Campanella*, *Cookeina*, *Cyathus*, *Cymatoderma*, *Dacrymyces*, *Favolus*, *Fomes*, *Fomitopsis*, *Ganoderma*, *Geastrum*, *Hexagonia*, *Lentinus*, *Lycoperdon*, *Neofomitella*, *Nigroporus*, *Perenniporia*, *Podoscypha*, *Pycnoporus*, *Schizophyllum*, *Trametes*, and *Xylaria*. Our study highlights the richness of macrofungi in the Philippines and calls for more active research documenting our mycoflora, particularly in different forest habitats in the country.

Keywords
biodiversity, field-based survey, fungi, species richness, tropical forest

Introduction

The island of Mindoro is an area of high floral and faunal diversity, particularly in some of its few remaining patches of intact forests. Among the well-known endemic animal species described from the island are the critically endangered Mindoro bleeding heart pigeon (*Gallicolumba platenae* Salvadori) and the black-hooded coucal (*Centropus steerii* Bourns & Worcester) (Birdlife International, 2016). A recent study by Villanueva and Buot (2015) on the island also showed 173 species of plants from 70 families, 25 of which were critically endangered, 46 as endangered, and 102 as vulnerable. However, due to its rich biodiversity, Mindoro Island is a key destination for ecotourism and beach recreational activities. The surge of tourists and the prevalence of human activities can have a significant impact on the flora and fauna of this area.

Mount Malasimbo located in Puerto Galera and Mount Siburan in Sablayan are two ecotourism hotspots in Mindoro Island. Both Puerto Galera and Sablayan have been listed as Terrestrial Conservation Priorities in Mindoro with a priority level of extremely high critical (Ong et al., 2002). Mt. Malasimbo is a lowland forest that is endangered due to logging and ecotourism. Mt. Malasimbo is easily accessible, and several areas are used for agriculture and business. For the protection of Puerto Galera's biodiversity, it is now under the UNESCO's Man and Biosphere Programme (Gatumbato, 2009). Mt. Siburan is another lowland forest located in Sablayan. Mt. Siburan can be described as having richer vegetation than Mt. Malasimbo. This is because the area is found within the area of the Sablayan Prison and Penal Farm that gives the forested area some protection. Mt. Siburan was declared as a site of the European Commission-supported Integrating Forest Conservation with Local Governance Project of the Haribon Foundation and Birdlife International (Gatumbato, 2009).

While flora and fauna are studied and documented in these mountain areas, such is not the case for macrofungi, which just like plants and animals, could also be threatened by ecotourism activities. A renewed interest in documenting fungi has been recently observed in the country. For example, Jacob et al. (2022) created a checklist of macrofungi so far recorded in the Philippines based on a limited number of publications. Dela Cruz and De Leon (2022) listed edible mushrooms known in the country while Dulay et al. (2023) reviewed records of wild mushrooms. Olayta and dela Cruz (2022) highlighted the lack of systematic surveys of specialized groups of macrofungi, e.g., bioluminescent fungi, which are known to occur in the country, as evidently shown in social media posts but with no detailed taxonomic studies. Among the few taxonomic studies on Philippine fungi is the assessment of mycofloral diversity in Aurora Province by Tadiosa et al. (2011), which documented 38 families, 68 genera, and 107 species of macrofungi. An ethnomycological study coupled with a field survey of macrofungi in resettlement areas and ancestral domains in Bataan, Pampanga, and Zambales identified 76 taxa, 38 of which were utilized by our indigenous Aeta communities (De Leon et al., 2012; 2013). These pioneering ethnomycological surveys were followed by recent surveys of mushrooms present and utilized by the indigenous communities in Ifugao province, which listed 109 macrofungi (De Leon et al. 2018, 2019) and by the Bugkalot tribal community in Nueva Vizcaya (Torres et al., 2020). Among the mountain forest sites so far studied are the Mt. Makiling Forest Reserve in Laguna with 20 mushroom species (De Castro and Dulay, 2015) and three mountain forest ecosystems in Southern Luzon with up to 35 documented species (Parlucha et al., 2021). Bustillos et al. (2024) also reported 108 species of macrofungi along elevational gradient in Mt. Arayat, Pampanga. Interest in macrofungi increased with the recognition of their natural bioactive compounds in pharmaceutical applications (Culliao et al., 2020). While efforts are made to document the macrofungal diversity in the Philippines, these remained sporadic and localized to few mountain sites in Luzon Island. It is therefore vital to assess the macrofungal biodiversity in the country, particularly in island forests such as that of Mindoro Island where macrofungal records are almost non-existent. The two mountain areas in this study are considered as key biodiversity areas. Hence, we report the first attempt to document available macrofungal species found in soil and decayed woods within the accessible trails within the dipterocarp forest sites at the foot of Mt. Siburan and Mt. Malasimbo, thereby providing valuable baseline information for future mycological studies on the island.

Materials and Methods

Study sites

The current study was carried out at the base of lowland dipterocarp forests in two collecting localities within Mindoro Island: Mt. Malasimbo in Puerto Galera, Oriental Mindoro and Mt. Siburan in Sablayan, Occidental Mindoro (Fig. 1). Prior to field collection, we secured permission directly from the local government units, particularly barangay officials and penitentiary administrators, within the area. About 30 km southeast of the municipality of Sablayan in Occidental Mindoro is Mount Siburan, a lowland mountain forest dominated by plants under the genus *Dipterocarpus*, *Ficus*, *Clerodendrum*, *Ixora*, and *Lunasia* (Pecundo et al., 2020). The sampling area was within the Sablayan Prison and Penal Farm. Here, two sampling sites were chosen – site 1: 12°49'40.7" N, 120°54'57.1" E and site 2: 12°49'2.3" N, 120°53'48.5" E. Meanwhile, Mt. Malasimbo is in the municipality of Puerto Galera in Oriental Mindoro. Mt. Malasimbo, another lowland dipterocarp forest dominated by plants under the genus *Dipterocarpus*, *Ficus*, *Cleidon*, and *Aglaia* (Pecundo et al., 2020), was also studied with two sampling areas – site 1: 13°28'30" N, 120°54'59" E and site 2: 13°28'19" N, 120°54'41" E. Here, we collected in a community forest at the base of the mountain. In each sampling area, three sampling points, approximately 100 m apart, were determined and served as the main reference point for collecting fungal specimens. All visible saprotrophic macrofungi growing on decayed wood, fallen logs or soil were collected. No ectomycorrhizal species were included in the study. Two field expeditions were done throughout the study: at the onset (June) and mid-term (October) of the rainy season. According to the Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA), the collecting localities have two distinct climate types. Mt. Siburan has two pronounced seasons, that is, dry from November to April and wet throughout the rest of the year (Type I) with maximum rain period between June to September while Mt. Malasimbo has no very pronounced maximum rain period, with dry season lasting only for one to three months (Type III). During the field collection, the average rainfall for the two sites were between 131 to 201 mm for Mt. Siburan and between 268 to 300 mm for Mt. Malasimbo (Pecundo et al., 2020). The average temperature in Mt. Siburan is 30.10 °C while Mt. Malasimbo has an average temperature of 26.6 °C.

Identification of macrofungi

The collected macrofungal samples were preserved as herbarium specimens by drying and/or by soaking in 70% ethyl alcohol. The specimens were brought to the Mycology Laboratory, Research Center for the Applied and Natural Sciences, University of Santo Tomas in Manila, Philippines for processing. The collected macrofungi were identified following macroscopic and microscopic morphological characterization. Morphological features included description of the pileus, lamellae, and stipe as well as the type of attachment to the substrate. Additional micromorphological features such as spore and hyphal traits were also observed with Hitachi TM3000 model Scanning Electron Microscope (Japan). For species identification, these morphological characters were considered and compared with published literature, e.g., Quimio (2001), Tadiosa et al. (2011), Kuo (2008), Pacioni (1981), and Weinstein et al. (2002).

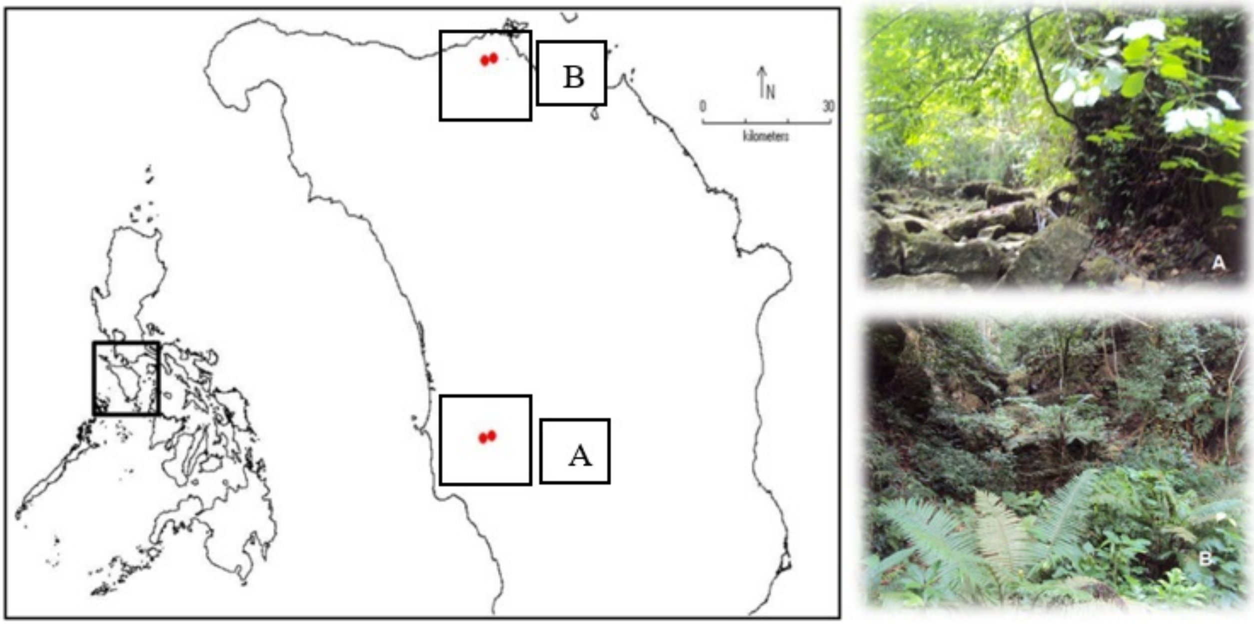


Fig. 1 – The two collecting localities in Mindoro Island: (A) Mount Siburan, Occidental Mindoro and (B) Mount Malasimbo, Oriental Mindoro. Mt. Siburan has Type I climate with two pronounced seasons, dry from November to April and wet throughout the rest of the year while Mt. Malasimbo has a Type III climate type with no distinct dry or wet season (PAGASA).

Genomic DNA of 12 representative specimens of some collected macrofungi were extracted and sequenced to confirm species identity. These specimens could not be fully identified mainly by morphological characterization. A modified Cetyltrimethylammonium bromide (CTAB) method was used for the extraction of DNA (Rogers and Bendich, 1994). The primer pair, ITS1 and ITS4, were used to amplify the rDNA internal transcribed spacer (ITS) region (White et al., 1990). PCR was performed using a C1000-Thermal Cycler (Bio-Rad, USA) with the following PCR conditions: initial denaturation at 95 °C for 3 min, 35 cycles at 95 °C for 30 s, 58 °C for 30 s, and 72 °C for 40 s, and final extension at 72 °C for 10 min. Gel electrophoresis was set up at 110V for 25 minutes and the DNA bands were visualized in a Bio-Rad imager machine. Purification was done using the commercially available kit GeneAll Biotechnology (Seoul, South Korea). After which, sequencing was done for both forward and reverse primers at Macrogen Inc., Seoul, South Korea. Each of the sequences was compared to those available on the GenBank database using BLAST search (Supplementary Table S1). Alignment of sequences was done using clustalW in MEGA11 software. Construction of the phylogenetic tree was performed using the maximum likelihood method in MEGA11, applying the Kimura 2-parameter model with 1000 bootstrap replications. The gene sequences of the specimens were later deposited to the National Center for Biotechnology Information (NCBI) GenBank with the accession numbers reported in Figure 3.

Results

A total of 34 species of macrofungi were collected and identified for both Mount Siburan and Mount Malasimbo, with 11 taxa that were identified only up to the genus level and 23 fully identified species. A comparative list of the macrofungi recorded in both collection sites is presented in Table 1. Twenty-five species were from Mt. Siburan, while 17 species were observed for Mt. Malasimbo. Among these, Polyporaceae was the most represented with 12 taxa, followed by Meruliaceae with 4 taxa, and

Sarcoscyphaceae with 3 taxa. Two taxa each were recorded for the families Ganodermataceae, Lycoperdaceae, and Xylariaceae. The families Agaricaceae, Auriculariaceae, Dacrymycetaceae, Fomitopsidaceae, Geastraceae, Marasmiaceae, Nidulariaceae, Schizophyllaceae, and Steccherinaceae were represented only by a single species. Taxa common to the two study sites were *Auricularia cornea* Ehrenb., *Ganoderma applanatum* (Pers.) Pat., *G. lucidum* (Curtis) P. Karst., *Hexagonia* sp., *Pycnoporus sanguineus* (L.) Zmitr., *Trametes vernicipes* (Berk.) Zmitr., Wasser & Ezhov, *Trametes* sp., and *Schizophyllum commune* Fr.

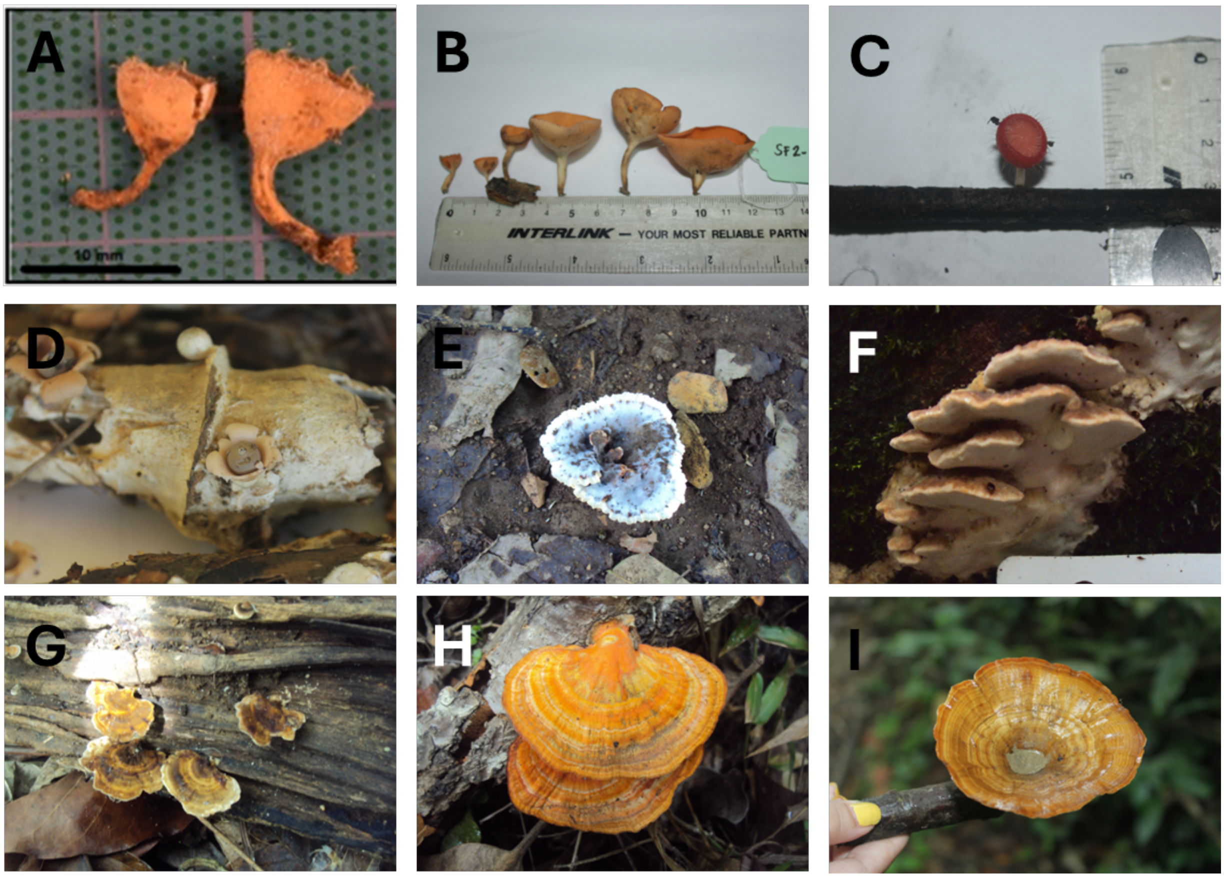


Fig. 2. – Some representative species of macrofungi belonging to Phylum Ascomycota and Basidiomycota that were collected from Mount Malasimbo and Mount Siburan in Mindoro, Philippines: (A) *Cookeina insititia*, (B) *Cookeina speciosa*, (C) *Cookeina tricholoma*, (D) *Geastrum mirabile*, (E) *Cymatoderma dendriticum*, (F) *Fomitopsis pinicola*, (G) *Trametes vernicipes*, (H) *Pycnoporus sanguineus*, and (I) *Trametes* sp.

We also compared the macrofungi in terms of their collecting seasons, i.e., at the onset (June) and at the end (October and November) of the rainy season. Twenty species were collected early and towards the end of the rainy season. Comparing species composition, species like *A. cornea*, *Campanella junghuhnii* (Mont.) Singer, *T. vernicipes*, *Trametes* sp., *Favolus grammocephalus* (Berk.) Imazeki, and *S. commune* were found in both collection periods. On the other hand, *Agaricus* sp., *Cyathus subglobisporus* R.L. Zhao, Desjardin & K.D. Hyde, *Dacrymyces spathularia* (Schwein.) Alvarenga, *Fomitopsis pinicola* (Sw.) P. Karst., *Lycoperdon perlatum* Pers., *Cymatoderma dendriticum* (Pers.) D.A. Reid, *Cymatoderma elegans* Jungh., *Podoscypha* sp., *Nigroporus* sp., *Perenniporia* sp., *Pycnoporus sanguineus*, *Trametes* sp., *Xylaria* sp., and *X. laevis* Lloyd were collected only in June, i.e., during the onset of the rainy season.

Table 1 – Occurrence of macrofungi in Mount Siburan and Mount Malasimbo, Mindoro Island.

Phylum/Order	**Family**	**Taxa**	**Substrate**	**Site[a]**		**Rainy Period[b]**		**Species recorded in other localities**
				MS	**MM**	**O**	**L**	
Ascomycota								
Pezizales	Sarcoscyphaceae	***Cookeina insititia***	wood		x		x	Nueva Vizcaya
		Cookeina speciosa	wood	x			x	Mt. Makiling
		Cookeina tricholoma	wood	x			x	Southern Luzon
Xylariales	Xylariaceae	***Xylaria laevis***	wood	x		x		This study
		Xylaria sp.	wood	x		x		
Basidiomycota								
	Agaricaceae	*Agaricus* sp.	soil		x	x		
	Lycoperdaceae	*Lycoperdon perlatum*	soil		x	x		Mts. Banahaw-San Cristobal
		Lycoperdon sp.	wood		x		x	
	Marasmiaceae	*Campanella junghuhnii*	wood	x		x	x	This study
	Schizophyllaceae	*Schizophyllum commune*	wood	x	x	x	x	Mountain Province
	Auriculariaceae	*Auricularia cornea*	wood	x	x	x	x	Ifugao
Dacrymycetales	Dacrymycetaceae	*Dacrymyces spathularia*	wood	x		x		Tarlac
Geastrales	Geastraceae	***Geastrum mirabile***	wood	x			x	This study
Nidulariales	Nidulariaceae	***Cyathus subglobisporus***	wood	x		x		This study
Polyporales	Fomitopsidaceae	*Fomitopsis pinicola*	wood	x		x		
	Ganodermataceae	*Ganoderma applanatum*	wood	x	x		x	Mountain Province
		Ganoderma lucidum	wood	x	x		x	Mountain Province
	Meruliaceae	***Cymatoderma dendriticum***	soil	x		x		This study
		Cymatoderma elegans	wood	x		x		Southern Luzon
		Podoscypha involuta	wood	x			x	This study
		Podoscypha sp.	wood	x		x		
	Polyporaceae	*Favolus grammocephalus*	wood		x	x	x	This study
		Favolus tenuiculus	wood		x		x	Laguna
		Favolus sp.	wood	x			x	
Polyporales	Polyporaceae	*Fomes* sp.	wood		x		x	
		Hexagonia sp.	wood	x	x		x	
		Lentinus sajor-caju	wood	x			x	Southern Luzon
		Neofomitella rhodophaea	wood		x		x	This study
		Pycnoporus sanguineus	wood	x	x	x		Mountain Province
		Trametes vernicipes	wood	x	x	x	x	This study
		Trametes sp. 1	wood	x	x	x	x	
		Trametes sp. 2	wood	x		x		
		Perenniporia sp.	wood		x	x		
	Steccherinaceae	*Nigroporus* sp.	wood	x		x		

[a]Sampling localities: MS – Mt. Siburan, MM – Mt. Malasimbo; [b]Sampling period: O – onset of rainy season (June), L – later period of the rainy season (October – November); [c]Localities were reported in the review of Dulay et al. (2023). Names in bold were molecularly identified.

Neofomitella rhodophaea (Lév.) Y.C. Dai, Hai J. Li & Vlasák, *G. applanatum*, *G. lucidum*, *Geastrum mirabile* Mont., *L. perlatum*, *Podoscypha involuta* (Klotzsch) Imazeki, *Favolus tenuiculus* P. Beauv., *Fomes* sp., *Hexagonia* sp., *Lentinus sajor-caju* (Fr.) Fr., *Polyporus* sp., *Cookeina insititia* (Berk. & M.A. Curtis) Kuntze, *C. speciosa* (Fr.) Dennis, and *C. tricholoma* (Mont.) Kuntze were gathered during the latter months of the rainy season.

We also determined the taxonomic diversity index (TDI), which is expressed as the ratio of species and genera (S/G). A higher S/G ratio, meaning a lower taxonomic diversity, was recorded for Mount Siburan (TDI = 1.38) than in Mount Malasimbo (TDI = 1.30), even though there were more species found in Mount Siburan. A lower S/G ratio of 1.25 was computed for the onset of the rainy season, hence a higher taxonomic diversity, while a higher S/G ratio of 1.35 was computed during the latter part of the rainy season.

While we employed the traditional morphological characterization to identify our collected macrofungi (Fig. 2), it is also useful to run some gene sequence analysis to confirm species identities. Figures 3 to 6 show the maximum likelihood trees generated from the sequence analysis of the ITS region of selected macrofungal specimens collected in this study. Five specimens were from Ascomycota, and two were placed under the genus *Xylaria*, with *X. laevis* ascertained with a bootstrap support of 99% for one specimen (Fig. 3A). The other specimens were identified as three *Cookeina* species (Fig. 4), that is, *C. insititia*, *C. speciosa*, and *C. tricholoma*. Most of our specimens belonged to the Phylum Basidiomycota. *Cyanthus subglobisporus* was confirmed with a bootstrap support of 93% (Fig. 3B) and *G. mirabile* with bootstrap support of 100% (Fig. 5A). The identities of two species under Meruliaceae, i.e., *Cymatoderma elegans*, and *C. dendriticum*, (Fig 5B) and a member of Polyporaceae, i.e., *P. sanguineus,* were also confirmed (Fig. 6). Nevertheless, due to a lower bootstrap support (BS), two specimens could only be identified up to the genus level, particularly *Xylaria* sp. (SF 3-011, BS = 49) (Fig. 3A) and *Trametes* sp. (SF 4-017, BS = 68) (Fig. 6), and these require additional gene markers to confirm species identities.

Discussion

Increasing interest in fungi in the Philippines came with the recent publication of a general reference book on Philippine fungi by Guerrero et al. (2022). There are recent efforts to document the diversity of other fungus-like organisms and lichens in the country with the publications of Dagamac and dela Cruz (2015, 2019) on Philippine myxomycetes, of Bennett and Thines (2020) on Philippine oomycetes, and of Paguirigan et al. (2020) on Philippine lichens. The reviews of Jacob et al. (2022) and Dulay et al. (2023) also provided a checklist of macrofungi from published literature over a given and limited period. The publication of these checklists, including this paper, remained important for the continuous documentation of our mycoflora.

This study dealt with the visible fruiting bodies of macrofungi collected during two expeditions in the lowland dipterocarp-dominated mountain forests of Mindoro Island, Philippines (Table 1). We reported 34 species with differences in the number of recorded taxa between the two collecting areas - Mount Siburan in Sablayan on the western side of the island (Occidental Mindoro) and Mount Malasimbo in Puerto Galera on the eastern side of the island (Oriental Mindoro) and between two sampling periods – at the onset (June) and later period (October-November) of the rainy season.

Incidentally, the two sampling localities also had two different climate types, and hence, differed in the period of the wet season. According to PAGASA (Philippine Atmospheric, Geophysical and Astronomical Services Administration), Mt. Siburan has a Type I climate with two pronounced seasons, dry from November to April and wet throughout the rest of the year, while Mt. Malasimbo has a Type III climate with no distinct dry or wet season. Though we did not do this study in relation to forest disturbance, we observed a certain degree of human activity in the area. For example, Mt. Malasimbo is near Puerto Galera and is part of the ecotourism activities for people visiting this city. On the other hand, the Sablayan penal colony lies at the foot of Mt. Siburan and could have contributed to lesser access to the forested areas on this mountain. Perhaps human disturbances could impact the assemblages of macrofungi in an area, but a systematic study is highly suggested to come up with well-supported arguments to support this idea.

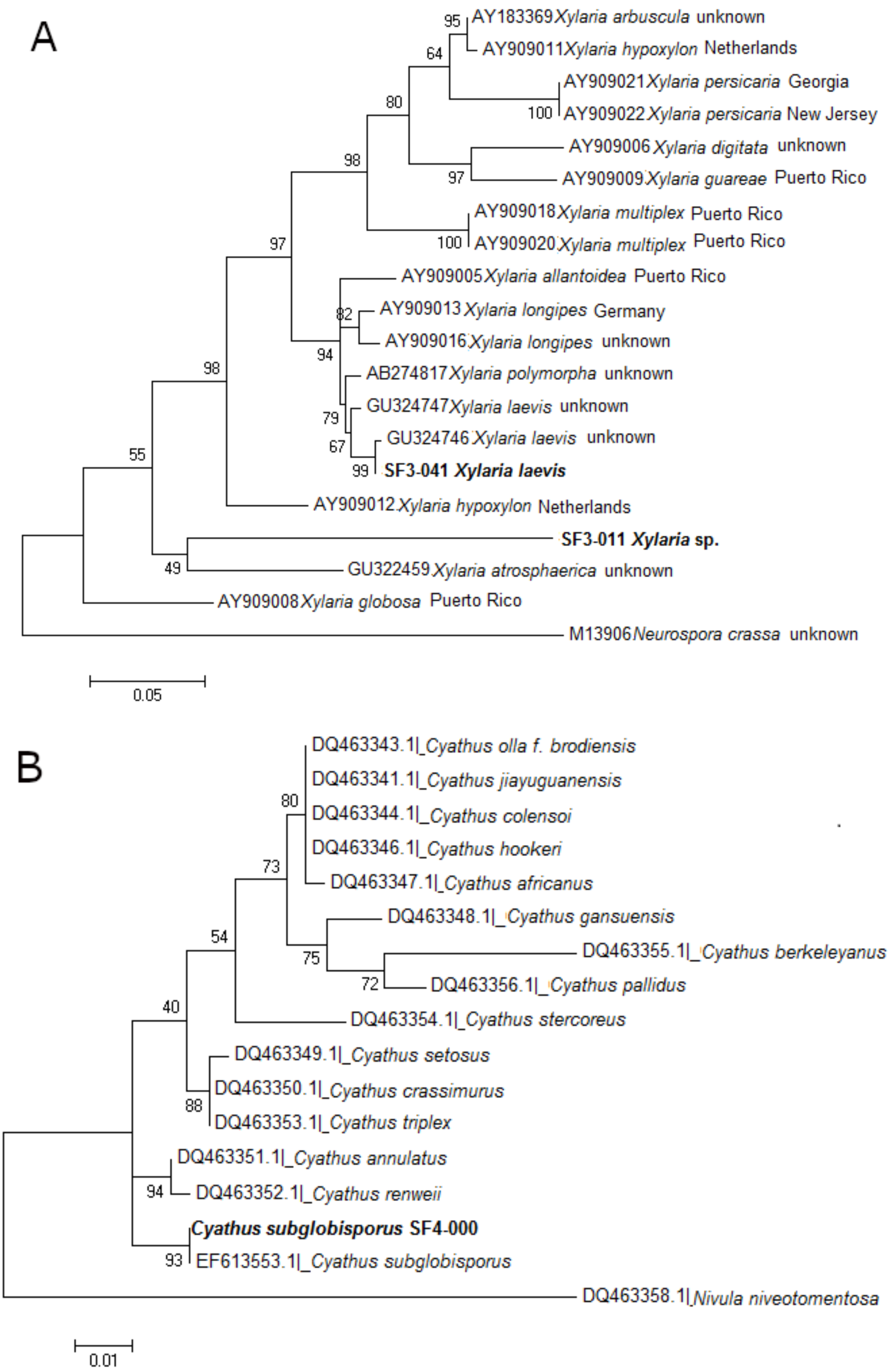


Fig. 3 – Maximum Likelihood tree and accession number of macrofungal specimens under (A) *Xylaria* (SF3-011 – PZ034695, SF3-041 – PZ034694), (B) *Cyathus* (SF4-000 – PZ007973) based on ITS sequence analysis using the Kimura 2-parameter model.

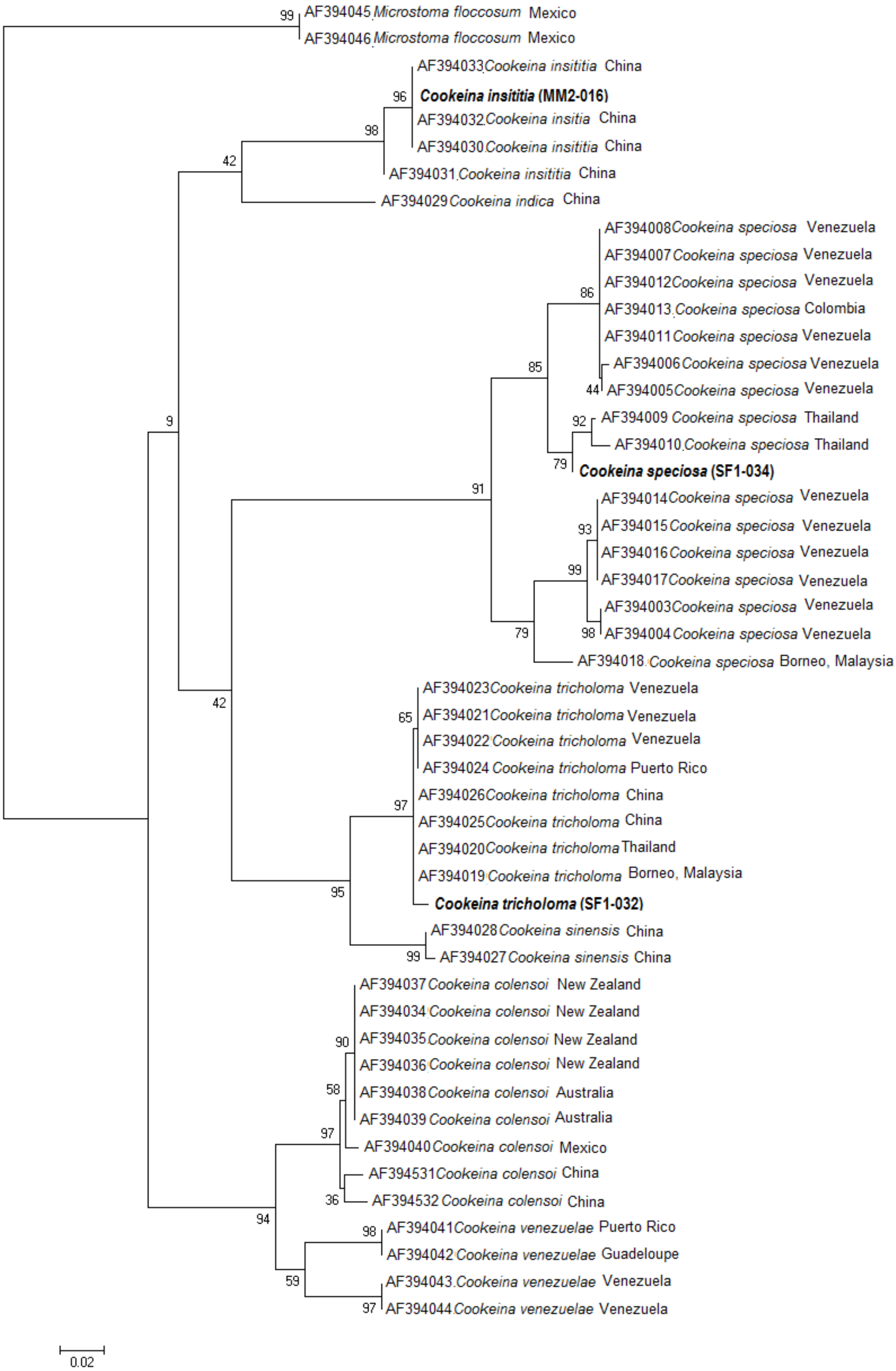
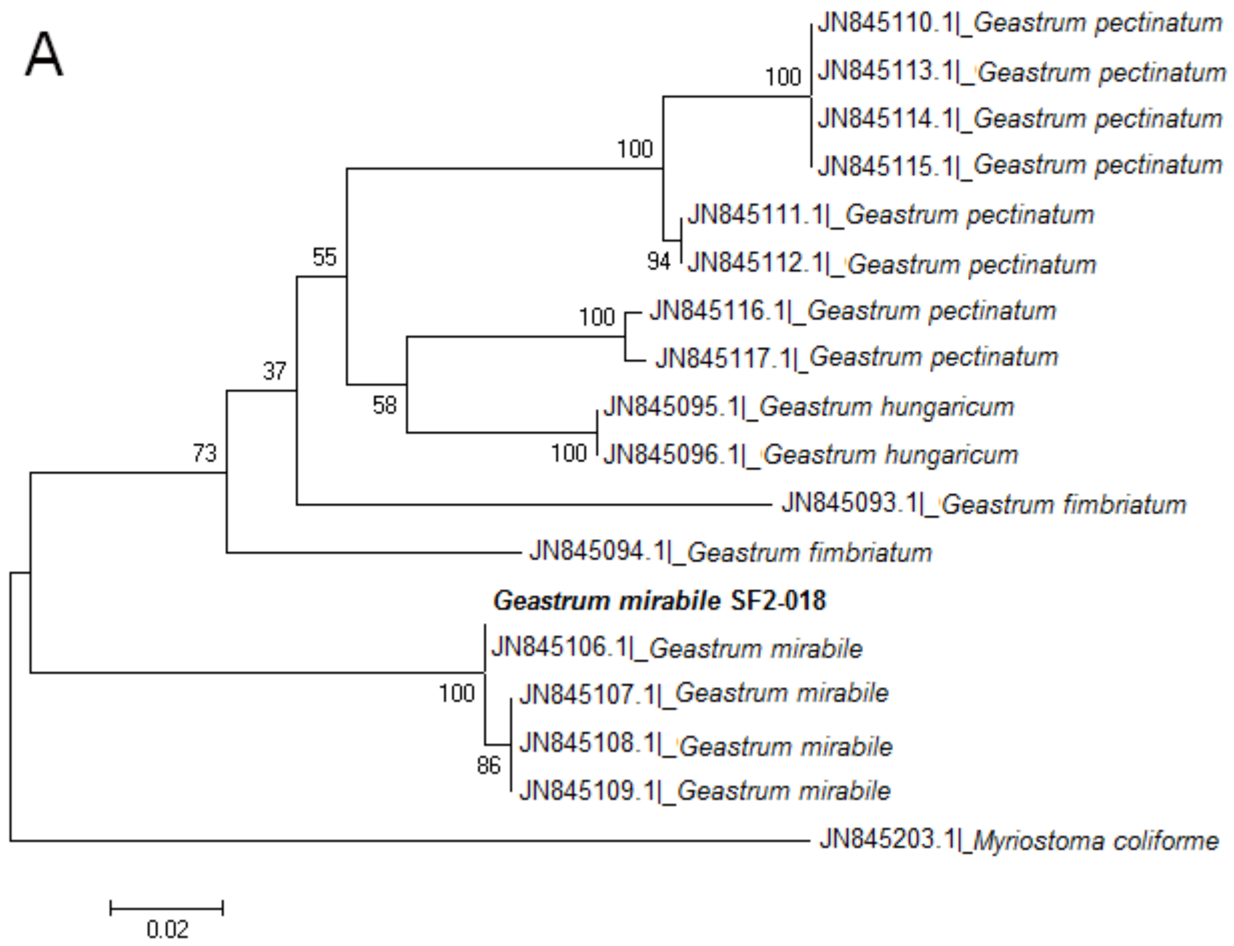


Fig. 4 – Maximum Likelihood tree and accession number of macrofungal specimens under *Cookeina* (SF1-032 – PZ007995, SF1-034 – PZ034693, MM2-016 – PZ034692) based on ITS sequence analysis using the Kimura 2-parameter model.



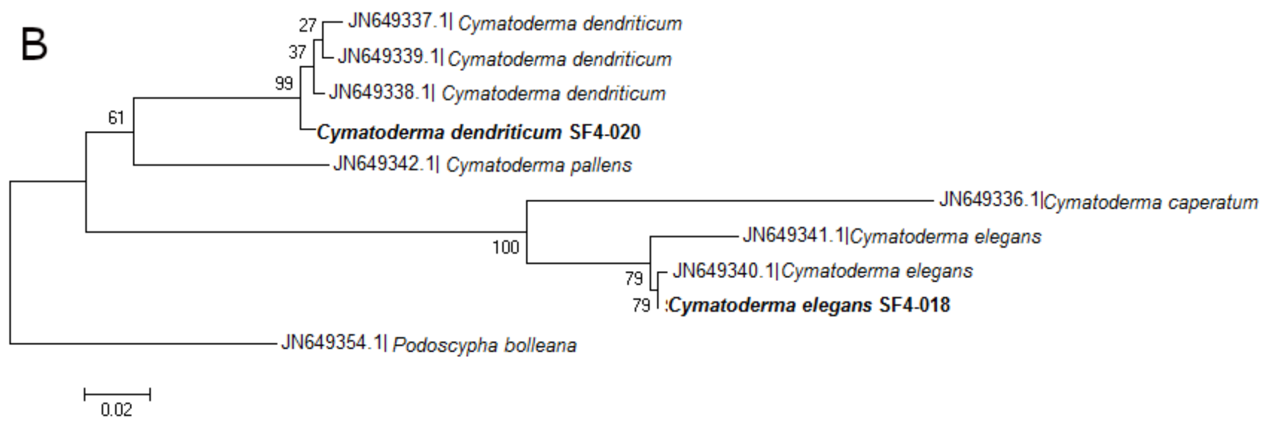


Fig. 5. – Maximum Likelihood tree and accession number of macrofungal specimens under (A) *Geastrum* (SF2 - see supplementary materials), (B) *Cymatoderma* (SF4-018 – PZ034696, SF4-020 – PZ008004) based on ITS sequence analysis using the Kimura 2-parameter model.

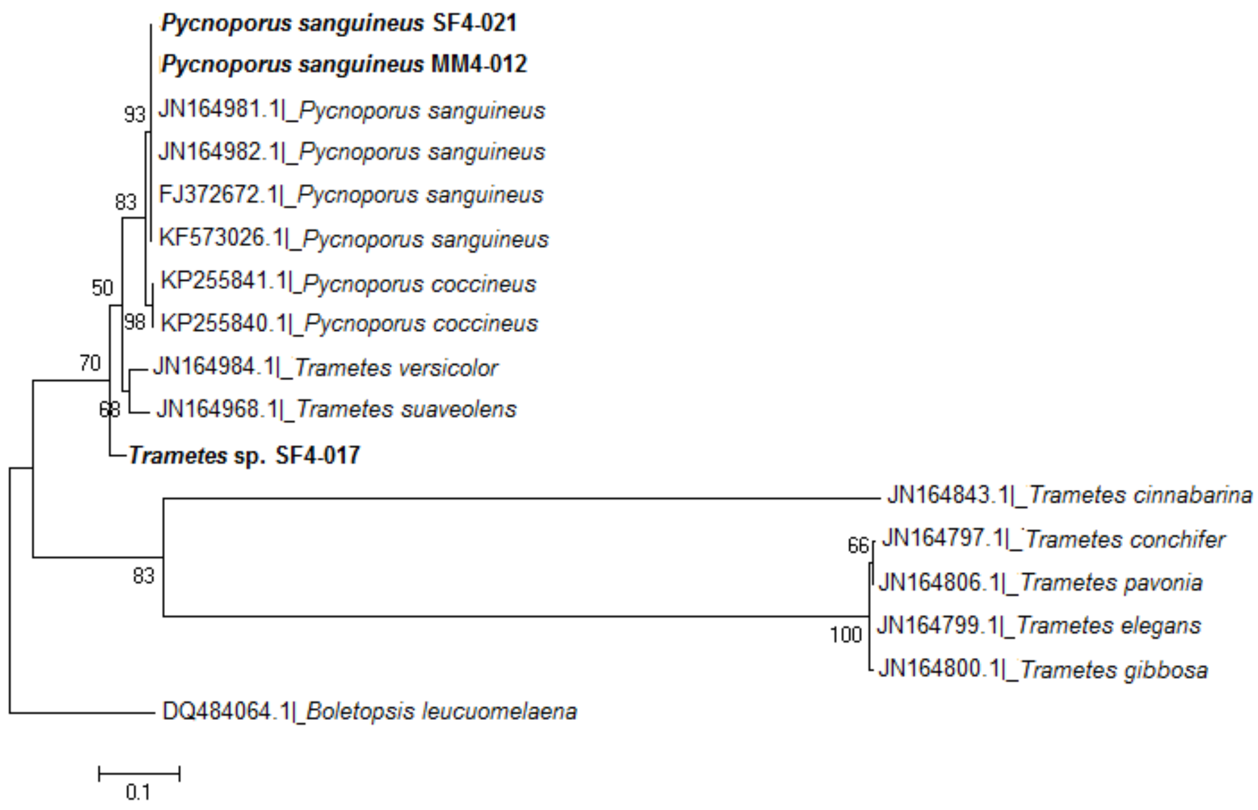


Fig. 6 - Maximum Likelihood tree and accession number of macrofungal specimens under *Pycnoporus* (MM4-012 – PZ034699, SF4-021 – PZ034697) and *Trametes* (SF4-017 – PZ034698) based on ITS sequence analysis using the Kimura 2-parameter model

Now, the present study compares two lowland, dipterocarp-dominated mountain forests. A higher number of taxa was collected from Mt. Siburan (n = 25) as opposed to Mt. Malasimbo (n = 17) from the 122 specimens obtained in the two study areas. The recorded number is relatively similar with those reported from other similar mount forest ecosystems in the country, e.g., in Mt. Makiling (20 species – De Castro and Dulay, 2015; 16 species – Parlucha et al., 2021), in Mt. Banahaw-San Cristobal (35 species – Parlucha et al., 2021), and in Quezon Protected Landscape (21 species – Parlucha et al., 2021). Similarly, 27 species were recorded from a lowland dipterocarp forest in Selangor, Malaysia (Nordin et al., 2024), although about three times higher number of species was recorded from three forest sites in Indonesia (Yeni et al., 2025). In the study of Deng et al. (2024), a much higher number of species, total of 468 species with 31 species Ascomycetes and 437 Basidiomycetes, was recorded from 3130 macrofungal specimens which were collected from the forests of the Helan Mts., Luo Mts., and Liupan Mts. in Ningxia, China. Indeed, sampling effort, that is, the frequency or extent of the collection and the land area of the sampling localities, influence the number of specimens that will be collected, and hence, the number of species. In the study of Yeni et al. (2025), five transects of approximately 1 km in each forest were surveyed once during a six-week simultaneous sampling period. The study of Deng et al. (2024) had longer duration of field collection. Their collections lasted one whole day to two days, which was done once a month from June to September (4 months) from the period of 2018 to 2023 (6 years). In contrast, our rapid field-based survey was conducted for a period of 4 – 5 hours for one day during two sampling expeditions.

In relation to the sampling periods, that is, one at the onset of the rainy season (June) and the other at the latter part of the rainy season (October – November), we did not observe differences in the number of taxa, i.e., 20 taxa of macrofungi for both collection periods. However, a higher taxonomic diversity expressed as TDI was computed from the collections during the onset of the rainy season. TDI considers both the number of species and genera. Many factors are known to influence the proliferation of macrofungi. Climate is certainly a factor that contributed to the distribution of macrofungi in both Mount Siburan and Mount Malasimbo. During the collection of macrofungi in the latter months of the rainy season, a greater amount of rainfall, with 268 mm, was recorded for Mt. Siburan in comparison with the 95.6 mm rainfall in Mount Malasimbo and may have influenced the growth of visible fruiting bodies (PAGASA). Other studies also reported the occurrence of fungal communities in relation to bio-physical factors and seasonality of the area, such as in the study in Taal Volcano Protected Landscape, Southern Luzon by Tadiosa and Briones (2013) and in Tai Po Kau Forest Stream, Hong Kong by Ho et al. (2002). These studies mentioned that several climatic factors, such as rainfall, temperature, relative humidity, wind velocity, and wind direction, can influence the macrofungal composition of a certain area.

Among the documented macrofungi, species belonging to Polyporaceae were the most represented with 12 taxa in this study. Polyporaceae was also noted as the most represented family in the studies of Tadiosa et al. (2011), De Leon et al. (2013), Tadiosa and Briones (2013) and Yeni et al. (2025). Comparing our study with previous studies on macrofungi in the Philippines, several macrofungi recorded here were also collected in the lowland forest of Bazal-Baubo Watershed in Aurora Province (Tadiosa et al., 2011). These species included *D. spathularia*, *G. applanatum*, *G. lucidum*, *T. vernicipes*, *P. sanguineus*, *Cookeina tricholoma*, and *Schizophyllum commune*. Aurora province is on the north-eastern coast of Luzon Island while Mindoro Island is situated on the south-western side. This study is the first extensive survey of macrofungi on the island of Mindoro, particularly in Mt. Siburan and Mt. Malasimbo.

In summary, this study compared the occurrence of macrofungi collected from two lowland, dipterocarp-dominated mountain forests in Mindoro Island, Philippines. A total of 34 species distributed to 23 genera and 15 families was reported from Mount Siburan in Sablayan, Occidental Mindoro and Mount Malasimbo in Puerto Galera, Oriental Mindoro. These were identified using combined morphological and molecular methods as *Agaricus* sp., *A. cornea*, *Campenella junghuhnii*, *Cookeina insititia*, *C. speciosa*, *C. tricholoma*, *Cyanthus subglobisporus*, *Cymatoderma dendriticum*, *C. elegans*, *Dacrymyces spathularia*, *Pycnoporus sanguineus*, *Favolus* sp., *F. grammocephalus*, *F. tenuiculus*, *Fomes* sp., *F. pinicola*, *Ganoderma applanatum*, *G. lucidum*, *Geastrum mirabile*, *Hexagonia* sp., *Lentinus sajor-caju*, *L. perlatum*, *Neophomitella rhodophaea*, *Nigroporus* sp., *Perenniporia* sp., *Podoscypha* sp., *P. involuta*, *Schizophyllum commune*, *Trametes* sp. 1, *Trametes* sp. 2, *T. vernicipes*, *Xylaria* sp., *X. laevis*, Comparing the two study sites, a higher number of taxa were collected from Mt. Siburan as opposed to Mt. Malasimbo, though there was an equal number of taxa collected during the onset and the latter months of the rainy season. Taxonomic diversity index, which determines the proportion between species and genera, was higher at Mt. Malasimbo and at the onset of the rainy season. Our study confirmed the rich macrofungal diversity in lowland mountain forests of Mindoro. We call for more similar survey for macrofungi in other forest sites in the country and compared these with the present study to come up with a comprehensive evaluation of macrofungi occurring in mountain forest ecosystems in the Philippines.

Acknowledgements

This research study is supported by the UNESCO Man and the Biosphere (MAB) Programme – Young Scientist Award (2014) given to the senior author, TEE dela Cruz, and by the Department of Science and Technology – ASTHRDP – National Science Consortium graduate scholarship and thesis grant for the first author, BTD Leaño. The authors also wish to thank Dr. Angel De Leon, Central Luzon State University, for her assistance in the morphological characterization and to Prof. Dr. Young Woon Lim and the researchers of the Mycology and Ecophylogeny Laboratory, Seoul National University, South Korea for their help in the molecular identification. The authors acknowledge the UST Research Center for the Natural and Applied Sciences for the facilities and additional funding, and Melissa Pecundo, Rio Frances Callores, Carlo Chris Apurillo, Jaycee Paguirigan, Arfel Tayona, and Edward dela Cruz for their assistance during the field collection. We are indebted to the local government units of Puerto Galera and Sablayan, particularly the officials of the Sablayan Prison and Penal Farm and barangay officials, for allowing us to conduct our field collection.

Author Contributions

Conceptualization, B.T.D.L. and T.E.E.D.C.; methodology, B.T.D.L.; software, B.T.D.L.; validation, B.T.D.L. and T.E.E.D.C.; formal analysis, B.T.D.L.; investigation, B.T.D.L.; resources, T.E.E.D.C.; data curation, B.T.D.L.; writing—original draft preparation, B.T.D.L.; writing—review and editing, B.T.D.L. and T.E.E.D.C.; visualization, B.T.D.L.; supervision, T.E.E.D.C.; project administration, T.E.E.D.C.; funding acquisition, T.E.E.D.C. All authors have read and agreed to the published version of the manuscript.

Conflicts of Interest

The authors declare no conflicts of interest. The funders had no role in the design of the study; in the collection, analyses, or interpretation of data; in the writing of the manuscript; or in the decision to publish the results.

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