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Study of macrofungi of Ascomycota in Pusuk forest North Lombok, West Nusa Tenggara, Indonesia

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Abstract—Pusuk forest as one of the main forest in Lombok Island is an ideal environment for the growth habitat of macrofungi. Macrofungi play vital roles in forest ecosystem and has high economical value. The purpose of this study is to determine of macrofungi of Ascomycota in Pusuk forest. Sample were taking by erube method from 3 different location in Pusuk forest. Eleven macrofungi of Ascomycota were identified. Out of these seven species belongs to Xylariaceae (2 genera), two species belongs to Geoglossaceae (2 genera) and rest belongs to Sarcoscyphaceae (1 genera) and Pezizaceae (1 genera). All macrofungi were found as new record in Pusuk forest and some macrofungi of this study were found as new records in Lombok Island as follows: *Microstroma* sp., *Xylaria hypoxylon* and *Xylaria* sp2. This study showed that environment condition influence the occurrence of macrofungi in Pusuk forest.

Keywords— Ascomycota, Lombok, Macrofungi, new record Pusuk forest.

I. INTRODUCTION

Pusuk forest is part of protected forest in Lombok island. This forest covering 2 regency area (North Lombok and West Lombok) and 4 village (Pusuk Lantari village, Mahaka village, Betulek village, Kenjak village). The condition of environment of Pusuk forest is supporting for growth many kinds of flora, especially macrofungi.

Macrofungi are defined as fungi that have structure that produce spores that called fruit body. Fruiting bodies of macrofungi visible directly without microscopic tools [1]. Macrofungi have been long of interest, to their important role in human welfare, both economical and ecological roles [2].

One of group of macrofungi come from division Ascomycota. Ascomycota is the largest class in Kingdom fungi than [3]. Some Ascomycota play ecosystem roles as saprotrophs, necrotrophic or biotrophic parasites of plant and animal, including human and some grew as endophytes in associations in plants [4].

Survey of macrofungi some forest in Lombok island were reported, but information of macrofungi in Pusuk forest is not recorded yet. Damage Acceleration of Pusuk forest has threaten existence of kinds of many organism in it, especially existence of macrofungi. The purpose of this study was to determine kinds of macrofungi from division of Ascomycota in Pusuk forest.

II. MATERIALS AND METHODS

Survey of macrofungi in Pusuk forest in this study is during many season until early summer from March to June 2014. Macrofungi specimens were collected from 3 different area of exploitation in Pusuk forest. The study area were selected from forest official and some information from local society. The collected sample of macrofungi were taking by erube method and placed in plastic box and carry them in a basket. For further observation, the collected samples brought to the laboratory for identification. Identification of collected sample were examined based on microscopic characteristics and compared with following available literature [3, 5, 6]. All the collected sample were preserved as dry specimen and stored in box specimen.

III. RESULT AND DISCUSSION

In this study, 11 species macrofungi from division of Ascomycota were identified. Identification was based on morphological characteristic. The data of identified specimens presented in Table 1 and Figures 1, 2, 3. The description of the collected specimens is recorded as follows:

Xylaria hypoxylon (Linkens, Fries). This species grows in rotting wood in cluster. Fungus color grayish with black base-stink. Fruiting body horn-like, branched, tough powdery with whitish spores, 50-75 mm length (Figure 1a). Microscopically, this species produce bean-shaped spores, $3,28-3,74 \times 4,84-7,19 \mu\text{m}$ (Figure 1c).

Xylaria psilomorphia (Peck). This species grows on dead wood in small cluster. Fungus color grayish when young, becoming black in age. Fruiting body finger-like or club-like, thick very tough, tough with cracked surface. Flesh white, $5,1 - 7,2 \text{ mm}$ width dan 12 mm length (Figure 1b).

Xylaria sp1. This species grows on dead wood in small cluster. Fungus color grayish with greenish branches. Fruiting body horn-like as *Xylaria hypoxylon*, but it has smaller fruitbodies, plant and smooth. Fruitbodies were powdery with grayish spore when found, $25-36,1 \text{ mm}$ length (Figure 1c). Microscopically, this species produce round spores $4,24-6,328 \times 5,6-7,86 \mu\text{m}$ (Figure 1d).

Xylaria longiana Rehm. This species grows on dead wood in big cluster. Fungus color black. Fruiting body small $18,1 - 24,2 \text{ mm}$ length and $1,3 - 2,3 \text{ mm}$ width, club-like, slender, tough, rough, flesh white. This species has round or acute tip (Figure 1d).

Xylaria sp2. This species grows on dead wood in cluster. Fungus color white with black base. Fruiting body

Table 1. Diversity of Macrofungi was collected from Park Forest

No	Order	Family	Genus	Species	Substrate	
1	Ascomycetes	Xylariaceae	Xylaria	<i>X. hypoxylon</i>	Rotting wood	
				<i>X. polyporum</i>	Dead wood	
				<i>X. longiana</i>	Dead wood	
				<i>Xylaria</i> sp.	Dead wood	
				<i>Xylaria</i> sp.	Rotting wood	
			Ditella	<i>D. grisea</i>	Live wood	
				<i>D. verrucosa</i>	Dead wood	
				Geoglossum	<i>Geoglossum</i> sp.	Dead wood
					<i>Geoglossum</i> sp.	Dead wood
				Perizales	Sarcoscyphaceae	Microstroma
Perizoma	<i>Perizoma</i>	Dead wood				



Figure 1. Macrofungi of Ascomycetes were collected from Park forest: a. *Xylaria hypoxylon*, b. *Xylaria polyporum*, c. *Xylaria* sp., d. *Sarcoscypha longiana*, e. *Microstroma* sp., f. *Perizoma verrucosa*

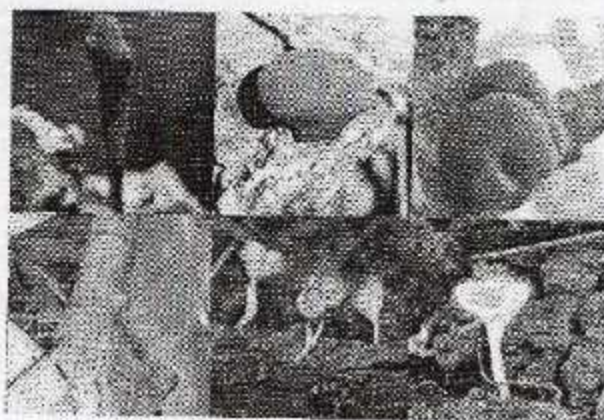


Figure 2. Macrofungi of Basidiomycetes were collected from Park forest: a. *Perizoma* sp., b. *Perizoma verrucosa*, c. *Microstroma grande*, d. *Microstroma* sp., e. *Microstroma* sp.



Figure 3. Some spores of Ascomycota were found while field exploration: a. *Asclerota*, b. *David'sia geminata*, c. *Asclerota sp.*

IV. CONCLUSION

There are 11 species macrofungi were found and identified in Puak forest. Out of these, some play roles in ecosystem function as endophyte, epiphyte and parasites of host. And the rest has nutritional and medicinal value.

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