

# **Diversity and distribution of macrofungi in Sungai Rawog Conservation Area: A Five-Year Comparison**

## **ABSTRACT**

Sungai Rawog Conservation Area (SRCA) is located within the Segaliud Lokan Forest Reserve and has been under the management of KTS Plantation Sdn. Bhd. (STSP) since 1993. Fungal surveys were conducted on two separate expeditions five years apart from each other (2018 and 2023) to help evaluate the favorability of the conservation management plan presently in place, particularly with regard to its ecological health. Various zones of the protected area were surveyed for fungi via opportunistic sampling which encompassed four distinct forest ecosystems, namely lowland mixed dipterocarp forest, Kerangas forest, Kapur Merah forest, and a late secondary forest. A total of 68 specimens composed of 44 genera in 29 families were identified in the preliminary survey in 2018, and an additional 163 specimens composed of 51 genera in 29 families were identified in the 2023 expedition. Grouping the fungi into ecological roles, in comparison of 2018 and 2023, we see an increase of ectomycorrhizal fungal diversity from 26 genera to 32 genera, and there is an increase of saprophytic fungal diversity from 14 genera to 17 genera. Numerous entomopathogenic *Ophiocordyceps* fungi were observed in both 2018 and 2023. Several species of ecological value that were not observed in the first expedition were collected in the recent excursion. Three specimens of *Lignosus rhinoceros* mushrooms, ectomycorrhizal mushrooms believed to have significant medicinal value, were collected from the Kerangas forest area. Other genera of fungi only observed in 2023 include *Trogia*, *Calostoma*, and *Psilocybe*, the latter of which was collected from elephant dung. Considering the results from both expeditions, the high diversity of ectomycorrhizal fungi is an indicator of good forest health. It seems that the current management practices are favorable with regard to the maintenance of the health of the forest.