Termite (*Coptotermes gestroi*) Tunneling Analysis in Peat Soil – Moisture Gradients

By:

Ikhsan Guswenrivo[1)] and Neoh Kok Boon[2)]

[1)] RDU for Biomaterials, Indonesian Institute of Sciences, Jl. Raya Bogor KM.46, Cibinong, 16911, Indonesia

[2)] Center for Southeast Asian Studies, Kyoto University, 46 Shimoadachi-cho, Yoshida, Sakyo-ku, Kyoto 606-8501 Japan

Abstract

Termite is well-known as the main decomposer but the detection of high level of termi attack in tropical peat land cultivated with oil palm has elevated their pest status enormously in tropical peat swamp ecosystem. To date, only three peer-reviewed papers are available which mainly documenting the termite assemblage collapse and the rising of their pest status in peat land cultivated with oil palms. However, there is limited information focusing on the ecology and behavior of termites in tropical peat land system that subject to annual drought and flood events. Understanding how the termites forage in the disturbed peat land system partly gives vital clues as to their modes of ecological success in that harsh environment. We begin with the laboratory observation on their foraging behavior in peat soil with increased moisture gradients in line with the field conditions. The results showed that the tunneling system was done well by the termites. In the other side, termites survived at each moisture level that was tested. This is shown by the percent termite mortality and food consumption on the last day of observation.

Key Words: peat soil, moisture, *C. gestroi*, foraging behavior, food consumption, ecological success.

No	Moisture (%)	Food Consumption (%) ± Stdv	Mortality rate (%) ± Stdv	
			Worker	Soldier
1	0	3.9289 ± 0.5689	12.83 ± 5.00	7 ± 2.50
2	50	3.8638 ± 0.8050	5.63 ± 1.98	1 ± 2.23
3	75	5.3396 ± 1.4762	3.74 ± 1.43	2 ± 2.74
4	100	4.6344 ± 0.7700	4.95 ± 0.63	5 ± 5.00
5	125	5.6096 ± 1.0306	4.68 ± 1.41	4 ± 5.48