

KEPELBAGAIAN DAN EKOLOGI CACING TANAH DI  
HUTAN SIMPAN ULU SUGUT,  
BELURAN, SABAH

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## **ABSTRACT**

### ***THE DIVERSITY AND ECOLOGY OF EARTHWORM IN SUGUT FOREST RESERVE (BELURAN)***

A study on the earthworm diversity was conducted in Sugut Forest Reserve (Beluran), Sabah in October 2014 and January 2015. The objectives of the study were to study the diversity of the earthworm in Sugut Forest Reserve (Beluran) and also to study the effect of abiotic factors on the diversity of earthworm in Sugut Forest Reserve (Beluran). In this study, abiotic factors were studied to identify the relationship between the abiotic factors and the diversity of the earthworm in the area. There are four abiotic factors were studied namely canopy cover, depth of leaf litter, pH value of the soil and the soil moisture in the area. The sampling was done using quadrat technique, 10m x 10m where ten sampling sites were chosen for each quadrat. Five sub-quadrat measuring 1m x 1m were sampled in each quadrat. The location for the sampling sites was chosen randomly. During the sampling, five species from four genera was recorded. All of the five species found were from the family of Lumbricidae. Shannon-Wiener diversity index showed the earthworms diversity in Sugut Forest Reserve can be considered as high ( $H' = 1.589$ ). Meanwhile for the Simpson diversity index, the result obtained ( $D = 0.7702$ ) also showed that the diversity of earthworms are high. The abiotic factor data collected was analyzed using the Pearson correlation analysis. The analyze showed that only three abiotic factors; depth of leaf litter ( $r = 0.387$ ), pH value of the soil in the area ( $r = 0.485$ ) and the soil moisture in the area ( $r = 0.250$ ) have an effect towards the earthworms diversity in the area. However, for the canopy cover ( $r = 0.044$ ), the analysis showed that it has no effect on the diversity of the earthworms in the area. This study managed to fulfill both of the objectives that were set. The study also managed to show that there are a high diversity of earthworms in Sugut Forest Reserve and can contribute to a good ecosystem level.