

**Assessment of soil properties on *Nepenthes ampullaria* density in tropical lowland forest:
A case study in Imbak Canyon, Sabah, Malaysia**

Elia Godoong^{a,*} and Rusea Go^b

^aInstitute for Tropical Biology and Conservation, Universiti Malaysia Sabah, Jalan UMS,
88400 Kota Kinabalu, Sabah, Malaysia.

^bDepartment of Biology, Faculty of Science, Universiti Putra Malaysia, Jalan UPM,
43400 Serdang, Selangor, Malaysia.

Abstract

Identifying the appropriate soil properties and plants association are important to the success of sustainable forest management projects. A study on the relationship between soil properties and *Nepenthes ampullaria* in primary lowland tropical forest was conducted in Imbak Canyon Conservation Area (ICCA), Sabah, Malaysia. Here we assessed the soils properties in relation to the density of *N. ampullaria* and its association with other plants. A total of 30 plots of 10 x 10 m were established and six soil samples per plot were analyzed for their pH value, soil moisture, soil organic matter and trace element. A survey on other plants associated with *N. ampullaria* was conducted within the sample plots. All plants associated with the *N. ampullaria* found in the mixed dipterocarp forest, primary forest where the soils was acidic and poor in nutrient content. Families of plant found associated with *N. ampullaria* were higher in Annonaceae, Dipterocarpaceae, Myrtaceae, Phyllanthaceae, Meliaceae and followed by other family in smaller quantity. These plants show well adaptation to the poor soils of their environment. We found the lowland primary rainforest in Imbak Canyon habitats provide a unique natural micro-habitat within the forests and the opportunity to better identify the role of soil ecosystem function in tropical soils.

Keywords: Soil properties, primary forest, lowland tropical forest, natural micro-habitat, soil ecosystem.

*Corresponding author: elia@ums.edu.my