

**PHYTOCHEMICAL SCREENING AND ALLELOPATHIC
ACTIVITY OF *Etlingera coccinea* (BLUME) S.SAKAI & NAGAM.
STEM TOWARDS SEED GERMINATIONS OF
MUNG BEAN, *Vigna radiata* (L.) WILCZEK**

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This Final Year Project Report entitled “**Phytochemical screening and allelopathic activity of *Etilingera coccinea* (Blume) S.Sakai & Nagam. stem towards seed germinations of mung bean, *Vigna radiata* (L.) Wilczek**” was submitted by Estelle Lius, in partial fulfillment of the requirements for the Degree of Bachelor of Science (Hons.) Biology, in the Faculty of Applied Science, and was approved by

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ABSTRACT

PHYTOCHEMICAL SCREENING AND ALLELOPATHIC ACTIVITY OF *Etlingera coccinea* (BLUME) S.SAKAI & NAGAM. STEM TOWARDS SEED GERMINATION OF MUNG BEAN, *Vigna radiata*

Allelopathy refers to the chemical inhibition of one species of plant by another. Allelopathic chemicals can be present in any part of plant. The purpose of this study is to determine the allelopathic activity of *Etlingera coccinea* (*E.coccinea*) or locally known as “tuhau” in Sabah. The phytochemical analysis of allelopathic compound from ethyl acetate and petroleum ether of *E.coccinea* stem extract was conducted to screen the presence of alkaloid, tannins, flavonoids, saponin and terpenoids. The result obtained from the phytochemical screening shows that tannins, flavonoids and saponins are present in *E.coccinea* sample extract. Germination, seedling growth and water uptake of *Vigna radiata* were used as the parameters to evaluate the allelopathic activity of *E.coccinea* by using bioassay method. For the allelopathic studies of seed germination, both the ethyl acetate and petroleum ether dried sample extracts shows 100% seed germination. As for the radicle length evaluation, the ethyl acetate and petroleum ether fresh sample extract shows abnormal growth of radicle compared to radicle growth in water which served as control for negative allelopathy with the percentage of inhibition by 63.60% and 41.57% respectively. Lastly, for water uptake measurement, the petroleum ether dried sample extract has the lowest percentage of water uptake by seed. It was concluded that petroleum ether dried *E.coccinea* extract has yield the highest allelopathic effect toward the test organism, *Vigna radiata*. More study on allelopathic potential in plant should be conducted in plant that is commonly used as intercropping to identify whether or not the plant was present with allelopathic activities.