

**ANTIOXIDANT ACTIVITY AND TOXICITY STUDIES  
OF *Vernonia cinerea*, *Peperomia pellucida* AND THE  
COMBINATION OF *Vernonia cinerea* AND *Peperomia  
pellucida***

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This Final Year Project Report entitled “**Antioxidant Activity and Toxicity Studies of *Vernonia cinerea*, *Peperomia pellucida* and the combination of *Vernonia cinerea* and *Peperomia pellucida***” was submitted by Nurul Syafiqah binti Zaharin, in partial fulfillment of the requirements for the Degree of Bachelor of Science (Hons.) Biology, in the Faculty of Applied Sciences, and was approved by

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## ABSTRACT

### **ANTIOXIDANT ACTIVITY AND TOXICITY STUDIES OF *Vernonia cinerea*, *Peperomia pellucida*, AND THE COMBINATION OF *Vernonia cinerea* AND *Peperomia pellucida***

The present study was conducted to evaluate the antioxidant activity and toxicity levels of *Vernonia cinerea*, *Peperomia pellucida* and combination of *Vernonia cinerea* and *Peperomia pellucida*. The extract was prepared with methanol respectively. 2, 2-diphenyl-1-picrylhydrazyl (DPPH) assay were used to study their antioxidant activity while brine shrimp lethality test method was conducted to determine their toxicity levels. The extracts were compared with commercial antioxidant; butylated hydroxytoluene (BHT). *Vernonia cinerea* exhibits highest antioxidant activity which is 76.94% at 100mg/ml followed by the combined herbs (71.21%) and *Peperomia pellucida* (68.31%). IC<sub>50</sub> values were also calculated for each sample. *Peperomia pellucida* possess highest IC<sub>50</sub> which is 5.57 mg/ml, followed by combination of *Vernonia cinerea* and *Peperomia pellucida* which is 5.27 mg/ml and lastly *Vernonia cinerea* which is 2.91 mg/ml. The lower the IC<sub>50</sub> value, the stronger the ability of extracts to act as a DPPH scavenger. For brine shrimp lethality assay, the mortality percentage was taken after 6 hours and 24 hours of incubation period. After 24 hours incubation period, there are no survivors left and it may be influenced by several factors and therefore, the LC<sub>50</sub> values are only taken for 6 hours incubation period only. Brine shrimp lethality test show that all of the samples exhibit non-toxic characteristic as the value of LC<sub>50</sub> is greater than 1 mg/ml. Combined extracts of *Vernonia cinerea* and *Peperomia pellucida* have highest LC<sub>50</sub> value which is 32.61 mg/ml, followed by *Peperomia pellucida* (14.72 mg/ml) and *Vernonia cinerea* (14.10 mg/ml). It can be concluded that the combination herbs may not work well if combined together.