A REVIEW ON COMPARISON OF PHENOLIC, FLAVONOID AND TANNIN CONTENTS IN *Annona muricata* AND *Orthosiphon stamineus* FOR ANTIDIABETIC MEDICATION

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This Final Year Project Report entitled "A Review on Comparison of Phenolic, Flavonoid and Tannin Contents in *Annona muricata* and *Orthosiphon stamineus* for Antidiabetic Medication" was submitted by Siti Nurathirah binti Md Zoher in partial fulfilment 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

Annona muricata and *Orthosiphon stamineus* species are known traditional herbs for medication uses, claimed that their phenolic and flavonoid contents may help in antidiabetic activities and its complications. Studies have been conducted from various researchers on both of these leaves in proving the effectiveness in treating diabetes. The aim of this review is to assemble the data on phytochemical properties including phenolic, flavonoid and tannin content present in both *A. muricata* and *O. stamineus* leaves based on literature data published in journals. Furthermore, this review also discusses the phytochemical contents relationship on controlling and lowering the blood sugar level and also increasing insulin sensitivity in hyperglycemia. Phenol and flavonoid have the ability to form a covalent connection with the α-amylase enzyme. The flavonoid containing hydroxyl groups and β ring replacement inhibit α-glucosidase and α-amylase. The phytochemical content might protect pancreatic β-cells of diabetic rats tested when treated with *A. muricata* and the plant extract help by improving peripheral glucose absorption. This review is focusing on research history of traditional uses, proving that both plants species contains active compounds for medication in antidiabetic treatment as well as *in vitro* and *in vivo* studies on the leaves extract.

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