THE COMPARISON OF TOTAL PHENOLIC AND FLAVONOID BETWEEN *Solanum lycopersium L.* AND *Solanum lycopersium var. cerasiforme*

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This Final Year Project Report entitled "The Comparison of Total Phenolic and Flavonoid Between *Solanum lycopersium L*. and *Solanum lycopersium var. cerasiforme.*" was submitted by Roslyana binti Che Din, in partial fulfilment of the requirements for the Degree of Bachelor of Science (Hons.) Biology, on the Faculty of Applied Sciences, and was approved by

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TABLE OF CONTENTS

ABSTRACT

THE COMPARISON OF TOTAL PHENOLIC AND FLAVONOID BETWEEN *Solanum lycopersium L.* AND *Solanum lycopersium var. cerasiforme*

The objective of this study was to determine total phenolic and flavonoid content from skins, seeds, and pulps of *Solanum lycopersium L.* and *Solanum lycopersium var. cerasiforme*. Next, the other objective was to compare the total phenolic and flavonoid from skins, seeds and pulps between *Solanum lycopersium L.* and *Solanum lycopersium var. cerasiforme*. In qualitative analysis, there were absence of phenolic and flavonoids in seed but presence in skin and pulp for both samples. In quantitative analysis, total phenolic and flavonoid of *Solanum lycopersium L.* was higher compared to *Solanum lycopersium var. cerasiforme*. The total phenolic content in the three part of *Solanum lycopersium L.* ranged from 40.32 ± 0.12 mg GAE/g to 11.89 ± 0.10 mg GAE/g while *Solanum lycopersium var. cerasiforme* ranged from 20.69 ± 0.21 mg GAE/g to 5.63 ± 0.15 mg GAE/g. Next, total flavonoids content from skin, pulp and seed of *Solanum lycopersium L.* ranged from 7.96 ± 0.11 mg GAE/g to 4.20 ± 0.04mg GAE/g while *Solanum lycopersium var. cerasiforme* ranged from 4.22 ± 0.03mg GAE/g to 2.65 ± 0.03mg GAE/g. Furthermore, the total phenolic and flavonoids of skin and pulp extracts for *Solanum lycopersium L.* and *Solanum lycopersium var. cerasiforme*. were significant ($p<0.05$). Therefore, it is important to consume tomatoes along with their skin in order to attain maximum health benefits. Besides that, a few factors such as optimal condition and use several solvents to maximize the yield of antioxidant should be considered in qualitative analysis.