EFFECT OF MOISTURE CONTENT, TEMPERATURE, PRESSURE ON THE EXTRACTION OF *VERNONIA CINEREA* BY USING SUPERCRITICAL CARBON DIOXIDE EXTRACTION AND ITS QUALITATIVE ANALYSIS

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AUTHOR'S DECLARATION

I declare that the work in the thesis was carried out in accordance with the regulation of Universiti Teknologi MARA. It is original and is the results of my own, unless otherwise indicated or acknowledge as reference work.

I, hereby acknowledge that I have been supplied with the academic rules and regulationsUniversiti Teknologi MARA, regulating the conduct of my study and research.

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We declared that we read this thesis and in our point of view this thesis is qualified in terms of scope and quality for the purpose of awarding the Bachelor of Chemical Engineering (Environment) with Honours.

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ABSTRACT

Most of conventional extraction methods use high volume of solvent which is highly toxic to human. To extract botanical materials for human to consume, it is better to use lower volume of solvent as possible [1]. The selection of supercritical carbon dioxide extraction method is based on the method properties that have a great operating condition that has lower extraction time, low solvent usage as well as the ability of the carbon dioxide properties that have a good interaction to the sample for the extraction to occur. The usage of alcohol as a co-solvent also can be implemented with much lower volume compare to conventional extraction method. However, moisture contents analysis need to be identify first before the extraction begin. From the experiment, it is found that the samples need to be dry in the oven for 9 hours in order to completely remove the moisture contents in the samples. The optimum operating pressure and temperature is 350 bar and 60°C respectively. The qualitative analysis study of VC has been done by using LC-MS. From the analysis, a few anti-viral and anti-cancer compounds has been found such as salvigenin, robustaquinone H, which prove that VC has a great potential as an alternative treatment for cancer and virus type flu such as dengue and malaria.