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**GREEN TECHNOLOGY EXTRACTION AND QUALITY CONTROL OF CBD OIL**Suchada J<sup>1\*</sup>, Lukman S<sup>2</sup>, Famera M<sup>2</sup>, Apirada S<sup>2</sup>, Nalinee P<sup>3</sup> and Thanapat S<sup>4</sup>

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**ABSTRACT**

*Cannabis sativa* L. (hemp) is used to make a variety of commercial, industrial and medicinal use. In this study, we investigated the development of a green technology extraction methods and efficient technique for the analysis of the main non-psychoactive cannabinoids in hemp inflorescences. We designed to identify samples with a high content of bioactive compounds, with a view to underscoring the importance of quality control in derived products as well. Different extraction methods, including maceration (M), ultrasound-assisted extraction (UAE), microwave-assisted extraction (MAE) and supercritical-fluid extraction (SFE) were applied and compared in order to obtain a high yield of the target analytes from hemp. This study will develop a formulation of extracting pure CBD firm hemp in sesame oil. The results showed that supercritical-fluid extraction was proved to be the most suitable technique for the extraction of cannabinoids in hemp samples. HPLC was used for testing CBD in sesame oil that included determination of CBD, optimization method of extraction CBD in hemp inflorescences. Therefore, the researchers developed a reliable, precision and accurate method for analysis of CBD. Samples were analysed by HPLC connected with Merck™ AQ C18 column (150 x 4.6 mm, 5 µm) and a mobile phase of 82.5 % methanol: 17.5 % water was used. Detection was done at 220 nm. This report describes a standardized dissolution testing methodology by HPLC for analyzing CBD in sesame oil. The stability study reveals no significant variation in appearance, pH, percent drug content, viscosity, in vitro dissolution profile studies up to two months.

Keywords: *Cannabis sativa*, Hemp, Cannabidiol, Supercritical-fluid extraction