UNIVERSITI TEKNOLOGI MARA

CHARACTERIZATION OF DRIED CENTELLA ASIATICA. L (PEGAGA) THROUGH SPRAY DRYING

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ABSTRACT

Centella asiattica (L.) Urban within the family of Apiaceae is a tropical herb. The plant is native to Southern Asian countries like Asian Pacific country, China, Sri Lanka and several other Southeast Asian countries and is thought by many native other names. C. asiatica has been used for many years as ancient medication to cure numerous ailments. In addition, it has been used as a crucial ingredient for cosmetic recipes associated as an antimicrobial agent. For this experiment, the objectives are to observe the possible highest inlet temperature and the optimum condition that could be achieve to dry the *Centella Asiatica*. The physicochemical properties including antioxidant activity, process yield and moisture content. One among the most normally used techniques for drying is spray drying. Maltodextrin is one of the chemicals used for this experiment and acted as carrier in the spray drying method. The spray dryer model used for this investigation is the BUCHI Mini Spray Dryer B-290. The powder will undergoes several test (moisture content, yield, DPPH, TPC, color analysis). The extraction yield shows higher difference gap when there was maltodextrin being used. The results effect the production of the powder as the concentration of maltrodextrin varies from time to time. It was observed that DPPH antioxidant activity varies to the temperature at the end of the experiments.

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CHAPTER 1

INTRODUCTION

1.1 Research background

Centella asiattica (L.) Urban within the family of *Apiaceae* (or *Centella coriacea Namfd., Hydrocotyle asiatica L., Hydrocotyle lunata Lam., and Trisanthus cochinchinensis* Lour.) is a tropical herb. The plant is native to Southern Asian countries like Asian Pacific country, China, Sri Lanka and several other Southeast Asian countries as well as Thailand, and is thought by many native other names, like Gotu kola, Indian pennywort, Indian water navelwort, Asiatic pennywort, wild violet, tiger herb and marsh penny ship rot. In Thailand, the plant is known as Bua bok.(James & Dubery, 2009). It is also referred to as "mandukaparni" in Sanskritic language, "brahmi" in Telugu and "vallarai" in Tamil. (Gomathinayagam & Venkataraman, 2015).

C. asiatica has been used for many years as ancient medication to cure numerous ailments like body ache, wound healing, asthma, headache, leprosy, ulcers, insanity, eczemas, tumor and cancer, diabetes, and amnesia. In addition, it has been used as a crucial ingredient for cosmetic recipes associated as an antimicrobial agent. (Niamnuy, Charoenchaitrakool, Mayachiew, & Devahastin, 2013). Besides, *C. asiatica (Linn)* Urban or pegaga, (M. K. M. Zainol, Abdul-Hamid, Bakar, & Dek, 2009) has antioxidative property and used for the treatment of biological process disorders, urinary diseases, in Hansen's disease historically.(Gomathinayagam & Venkataraman, 2015).