

**UNIVERSITI TEKNOLOGI MARA**

**CHARATERIZATION OF OVEN-DRIED CENTELLA  
ASIATICA L. (PEGAGA) LEAVES BY USING OVEN  
DRIED AS A METHOD**

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# CHAPTER 1

## 1. Introduction

### 1.1 Abstract

This research is mainly to produce dried *Centella Asiatica* L. (CAL) powder through oven-dried. Since there are no reviews regarding on characterization of CAL that using this method, therefore this research will cover an overview on physicochemical properties on CAL powder by oven-dried and study the effect of temperature on drying rate, moisture content, color and antioxidant activity on methanol. Drying is the way toward removing water from a sustenance item which is practiced by heat. The result showed that as the drying temperature increased, the percentage of moisture content decreased. At temperature 40°C and 80°C the value of total color difference and pH were  $\Delta E=53.90$ , pH=7.07 and  $\Delta E=50.54$ , pH=5.92 respectively, so the higher the drying temperature the lower the value of total color difference and pH. Result showed that temperature effect the drying rate, time taken, moisture content, color and antioxidant of CAL.

## 1.2 Background Study

This exploration is mostly to deliver dried *Centella Asiatica* L. (CAL) powder. Drying is the way toward removing water from a sustenance item which is practiced by heat. In this procedure, two transport phenomena happen (Mohd Zainol, 2009). They are heat transfer and moisture movement, which happen simultaneously. There are some ways to produce dried CAL powder, but in this research, it is decided to use oven-dried (OD) method. By oven-dried, there are a few things that need to be consider such as temperature, drying rate and moisture content(Lourdes Valadez-Carmona, 2016).

Drying procedures are essential in preservation and test preparation. By decreasing the moisture content under 15%, drying keeps any microbial development. Truth be told, effective drying technique will increase the quality of nature of dried item, for example, smell and appearance by ruining any biochemical changes. In the interim, oven-drying and freeze drying are considered as better techniques to limit the nutrient loss (Rabeta, 2013)

Moisture content influences the processibility, time-frame of realistic usability, quality of product. Exact moisture content assurance subsequently assumes a key job in guaranteeing quality in various organizations including Food, Pharmaceuticals and Chemicals. Moreover, the most extreme passable dampness content in specific items might be administered by legislation. Typically, Moisture content is resolved by means of a thermogravimetric methodology, i.e. by misfortune on drying, in which the example is heated and the weight reduction because of evaporation of moisture is recorded. Ordinarily utilized dampness investigation innovations are the moisture analyzer and the drying oven in blend with an equalization (Jindal, 1987).