ABSTRACT

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EFFECT OF TEMPERATURE AND DRYING METHOD ON SENSORY AND FUNCTIONAL CHARACTERISTICS OF TEMPEH FLOUR
(xiv + 55 pages: 11 tables, 15 figures, 16 appendices)

Tempeh is nutritious cooked fermented-soybean that is originated from Java, Indonesia. With its high consumption in Indonesia and popularity across the world, tempeh is known only to be consumed directly after cooking and deep-fat frying. The utilization of tempeh needs to be increased to optimally get the benefit from the tempeh. Making the tempeh into flour could not only increase its utilization, but it is also known to increase the nutritional profile of the product greatly. The aim of this study is to determine the best method in making tempeh flour. In previous studies, the tempeh flour was also observed to have tart flavor that is disliked by the consumers. With frying known to remove the tart flavor of tempeh, other pre-treatments of preparing the tempeh prior to making tempeh flour are studied. Therefore, pre-treatments (frying, baking, and steaming) are studied in light of removing the tart flavor in the tempeh flour and increasing its acceptance. The best pre-treatment chosen was frying, based on the result of the hedonic test of the sensory evaluation of the tempeh flour. The drying method (cabinet drying and oven drying) and temperature (50, 70, and 90 °C) were also studied using the best pre-treatment (frying) to find the best method in making the tempeh flour. The best drying method and temperature to determine the best method were chosen by observing the antioxidant activity and other functional properties (total phenolic and total flavonoid). The result was that there was no significant effect (p > 0.05) in the drying method used towards the antioxidant activity of the tempeh flour and the best antioxidant activity was found at temperature of 50 °C of 67.883 ± 1.085 mgAAE/100gr dry sample and 70 °C of 67.150 ± 1.538 mgAAE/100gr dry sample. However, in concern of the shelf life, the drying temperature of 70 °C could produce lower moisture content with the same drying time. Thus, the best method in making tempeh flour is by using frying pre-treatment and drying temperature of 70 °C, using either oven or cabinet.

Keywords  :  Tempeh flour, best method, acceptance, antioxidant, drying method, temperature
References  :  46 (1979-2014)