PHYSICOCHEMICAL PROPERTIES AND SENSORY EVALUATION OF 'KUIH APAM BERAS' MADE FROM DIFFERENT TYPES OF RICE FLOUR

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ABSTRACT

PHYSICOCHEMICAL CHARACTERISTICS AND SENSORY EVALUATION OF 'KUIH APAM BERAS' MADE FROM DIFFERENT TYPES OF RICE FLOUR

The physicochemical and textural properties of rice grains determine the basic food quality and palatability of the cooked product, including the overall quality, pasting properties, and texture. This study was carried out to determine the effect of different types of rice flour which are white rice, basmathi rice, brown rice and parboiled rice on physical and chemical properties of 'Kuih Apam Beras'. The physical characteristics of rice flour and 'Kuih Apam Beras' measured were colour, viscosity and texture profile analysis. While the chemical analysis determined was percentage of amylose contents in the rice flours. Sensory evaluation was also evaluated on 'Kuih Apam Beras' from different type of rice flour. The result shows that brown rice contained the highest amylose followed by basmathi rice, parboiled rice and the least was white rice flour. The highest lightness (L*) value was observed in white rice flour, followed by basmathi rice, brown rice and parboiled rice flour. The highest redness (a*) value was observed in parboiled rice flour, followed by brown rice, basmathi rice and white rice. The highest b* value shown by parboiled rice followed by brown rice, basmathi rice and the lowest was white rice. The viscosity of the 'Kuih Apam Beras' batter was significantly affected by the of rice flour used. Brown rice showed the highest viscosity, followed by parboiled rice, basmathi rice flour and the lowest was white rice. The texture attributes of 'Kuih Apam Beras' produced was also found to be affected by the types of rice flour used. Sensory evaluation results shows that panelist most preferred 'Kuih Apam Beras' made from white rice flour as compared to the other types of rice flour based on the appearance, colour, aroma, texture and overall acceptability of 'Kuih Apam Beras' evaluated.

CHAPTER 1

INTRODUCTION

1.1   Background

Rice *(Oryza sativa* L.) is one of the major food crops in the world and more than 50% of the world's populations depend on rice as their primary caloric source (Ahmed *et al*., 2007). Rice is primarily classified as according to its kernel form and grain shape into three categories: long, medium, and short grains. There are differences in cooking quality within the grain shape categories, although the long grain varieties are typically firm and not sticky when cooked, while medium and soft grain varieties are soft and sticky (Mutters & Thompson, 2009). Besides, there are many varieties of rice in the world with different shapes and sizes ranging from the long and slender to the short and tubby. In Malaysia, the main varieties of rice found in retail outlets are ordinary local and imported white rice, brown unpolished rice and specialty rice such as fragrant rice, Basmati, parboiled and glutinous rice. The main criteria in the classification are length of grain, content of head rice, content of broken rice and milling degree.

Parboiled rice is the rice which a hydrothermal treatment applied to raw paddy or brown rice including soaking, steaming and drying (Lv *et al.*, 2009). The major reasons for parboiling rice include higher milling yields, higher