

**EFFECT OF DIFFERENT *RAGI* ON SUGAR PRODUCTION AND
FERMENTATION QUALITY OF FERMENTED GLUTINOUS RICE**

SITI MUTHEERAH BT ABD AZIZ

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ABSTRACT

EFFECT OF DIFFERENT *RAGI* SOURCE ON SUGAR PRODUCTION AND FERMENTATION QUALITY OF FERMENTED GLUTINOUS RICE

Fungi diversity analysis of local *ragi* obtained at different locations was conducted. Then the quality of fermented glutinous rice regarding the glucose content was analysed using High Performance Liquid Chromatography- Evaporator light scattering detector (HPLC-ELSD). This study was conducted since there is no literature on the fungi diversity of local *ragi*, therefore makes it difficult for large scale production of *tapai*. The significances of this study are it will help to understand the contribution of the different *ragi* towards *tapai* quality so that large scale production of *tapai* is possible. Therefore some improvement can be made and this traditional food maybe someday can successfully be manufactured in factory. Samples were bought from Kedah, Kelantan, Selangor, Perak and Johor. There are 37 trained panelists were used during the Quantitative Descriptive Analysis (QDA) to look at the sweetness intensity of *tapai*. It was found that the sweetness difference was significant at 1% level while glucose content was significantly difference at 5% level. This study also shows that different location of *ragi* source have different fungi diversity. Moulds that can be found from the analysis are *Rhizopus oligosporus*, *Rhizopus oryzae*, *Aspergillus oryzae* and *Aspergillus flavus* while the yeasts are *Candida utilis* and *Saccharomyces cerevisiae*. This study also revealed that presence of *Rhizopus oligosporus*, *Rhizopus oryzae*, *Candida utilis*, and *Saccharomyces cerevisiae* in *ragi* give the highest glucose production, 55.40%, which also recognised as the sweetest sample by the panelist.

CHAPTER 1

INTRODUCTION

1.1 Background and problem statement

Preservation, as the word itself, to preserve food. It is one of the technique where we can increase the shelf life of a food, make some kind of unique and appealing characteristics to the food or renewable the taste, so there will be variety type of consuming food. Such drying ,salting, and fermentation. Traditionally the purpose also to keep the shelf life longer. So people would not have to worry about their food become spoiled.

Nowadays, in the era of food technology, with the highest level of food production, the industry can claim that they have elevated to produce fermented food at large scale with the highest level of technology. Therefore the production will be more consistent in the aspect of quality and quantity. However, in Europe, some products, such as cheese, are still being manufactured in traditional localised 'cottage' or 'farmhouse' manner. This was because customer claims that the original flavour and aroma will disappeared in 'factory' manufactured products. The challenge of food scientist and technologist is to produce large -scale production of fermented food without losing their unique flavour and other associated traits with the traditional product. In this project, fermented glutinous rice, or also known as