

# Application of a Plackett-Burman Design for Screening Raw Materials Mainly Affecting the Properties of Mum (Thai Fermented Sausage)

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## ABSTRACT

*The objective of this study was to screen the factors that play an important role on quality of Thai fermented sausage (Mum) by using the Plackett-Burman screening design. The studied factors included 5 ingredients for Mum production namely minced garlic, roasted rice powder, salt, ground glutinous rice and sodium nitrite and 4 starter culture species, *Pediococcus acidilactici* KK3, *Weissella cibaria* CM7, *Lactobacillus plantarum* subsp. *plantarum* CP1, and *L. plantarum* subsp. *plantarum* KK6. According to the experimental design, twelve treatments of Mum were produced and then analyzed for sensorial quality (color, odor, homogeneity, hardness, sourness, saltiness and overall acceptability), pH, total acidity and texture (shear force). The analysis showed that among various studied factors, salt, sodium nitrite and *P. acidilactici* KK3 were the main factors influencing Mum quality.*

**Keywords:** Fermented sausage, Ingredient, Mum, Plackett-Burman design, Quality of sausage, Starter culture

## INTRODUCTION

Mum is a traditional fermented sausage mainly produced in northeastern region of Thailand. Its major compositions include minced meat and minced