

Identification of Main Factors Affecting Quality of Thai Fermented Pork Sausage (Sai Krok Prew)

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ABSTRACT

*Plackett-Burman design was used to identify the main factors affecting the qualities of Sai Krok Prew (Thai fermented pork sausage). Starter cultures (*Lactobacillus plantarum*, *Pediococcus cerevisiae* and *Micrococcus varians*), sugar and salt were found to be the main factors while ground garlic, white pepper, coriander seed, sodium nitrate and sodium nitrite the minor.*

Key words: Fermentation, Pork sausage, Starter cultures, Plackett-Burman design, Quality

INTRODUCTION

Sai Krok Prew is a traditional Thai fermented pork sausage. It is usually made from minced pork, salt, garlic, sugar, white pepper, coriander seed, cooked sticky rice and minced pork lard. After fermentation, it must always be cooked before eating. The interest in using starter cultures for sausage fermentation arises in parallel to the trend towards industrial sausage production, short ripening time and standardisation of product properties (Lücke, 1995). There are several reports on the utilization of starter cultures in the manufacture of fermented sausage (Wiriyacharee et al., 1991; Garriga et al., 1996; González and Díez, 2002; Leroy et al., 2002). In this study, a mixed starter cultures of lactic acid bacteria and nitrate-reducing bacteria were used to improve the quality of Sai Krok Prew. *Lactobacillus plantarum*, *Pediococcus cerevisiae* and *Micrococcus varians* were used together. Also the ingredients including sugar, salt, sodium nitrate, sodium nitrite, ground garlic, white pepper, coriander seed and cinnamon were studied to identify the main variables affecting the quality of Sai Krok Prew. These variables could be too many to study if using factorial experiments. In this experiment, the 9 factors would require 512 runs for a full factorial or 256 for a half-factorial design. Plackett-Burman design which has prove itself in many industrial situations is reputed to be most efficient in screening large number of variables (Stowe and Mayer, 1966; Anderson, 1981; Earle and Anderson, 1985). Therefore, it was used in this study.