

## Effect of Methocel™, Maltodextrin, Sodium Chloride, and pH on Foaming Properties and Foam-mat Drying of Aqueous Pandan (*Pandanus amaryllifolius*) Leaves Extract

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### ABSTRACT

*The pandan (*Pandanus amaryllifolius*) leaf is commonly used as a food coloring and flavoring agent. Aqueous pandan leaf extract has no foaming properties and deteriorates quickly. Finding the appropriate foaming agent and stabilizer during drying is a challenge. The objective of this research was to investigate the effect of Methocel™, maltodextrin, sodium chloride (NaCl), and pH on foaming properties and foam-mat drying of aqueous pandan leaf extract. Foaming properties of an aqueous extract from fresh pandan leaves were elucidated using Methocel™ K4M (1 and 1.5% w/w) as a foaming agent, maltodextrin (0, 5, 10 and 15% w/w) as a stabilizer, and NaCl (0, 3, and 5% w/w) as a foam improver. The foamed pandan leaf extract was dried using a batch-type cabinet dryer. The results showed that the appropriate concentrations of Methocel K4M™, maltodextrin, and NaCl were 1% or 1.5%, 15%, and 5% (w/w), respectively. Increasing the maltodextrin concentration in combination with NaCl significantly affected the foam density, foam overrun, and foam drainage volume of the pandan leaf extract ( $p < 0.05$ ). Adjusting the pH of the foam solution to 6.2-7.2 maintained the chlorophyll content during drying better than the control ( $p < 0.05$ ).*

**Keywords:** *Pandanus amaryllifolius*, Foaming properties, Methocel™, Maltodextrin, Sodium chloride

### INTRODUCTION

Pandan (*Pandanus amaryllifolius*) leaves have a unique scent, and are widely cultivated in Southeast Asia, including Thailand. The pandan leaf is used as a food coloring and flavoring agent in many kinds of foods and desserts, including iced and herbal drinks (Yahya et al., 2010; Ping et al., 2014). The pandan leaf is also used in Thai alternative medicine for assisting relaxation and satisfy-