Chapter 5
Animal-Based Fermented Foods in Tropical Countries: Functional Aspects and Benefits

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ABSTRACT

Tropical countries are rich in fermented animal foods, such as meat paste, shrimp paste, ronto, dadih, Nem chua, and chin som mok. The salt addition (2.4-3.0%) and carbon sources resulted in fermentation process at room temperature in tropical countries. The abundance of Salinococcus spp. during dough preparation and Lentibacillus spp. during fermentation contributes to the distinctive taste and umami of the shrimp paste. Lactic acid bacteria isolated from fermented animal foods have the potential as probiotics. Probiotics can play a role in increasing antioxidant activity and antimicrobial properties. Corynebacterium sp, Bacillus subtilis, and Lactobacillus plantarum were designated as functional starter cultures that could inhibit the growth of pathogenic bacteria (Staphylococcus aureus, Salmonella sp. and Escherichia coli). Animal based fermented foods in tropical countries are very diverse and have functional properties for health, related to antioxidant, probiotic, and antimicrobial properties.

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INTRODUCTION

Currently, a healthy lifestyle is becoming a trend in the world community. Therefore, the existence of fermented foods is needed. The fermented foods and their modifications continue to grow. In tropical countries, traditional fermented foods are very varied, both plant-based and animal-based fermented foods. Most fermented animal-based foods are sourced from livestock meat and seafood. Some examples of fermented animal foods that are well known in tropical countries are meat paste (*Petis*), shrimp paste, *Ronto*, *Cincalok*, *Dadih* (Indonesia), *Nem Chua* (Vietnam), and *Chin Som Mok* (Thailand). Indonesia is a maritime country with two-thirds of its territory consisting of water. As a maritime country, Indonesia has enormous fishery potential. Indonesia's marine fisheries potential is 6.4 million tons annually, with an average production of 4.88 million tons annually (76.3%) (Rinto, 2018). This paper aims to describe various examples of animal-based fermented foods that are developed in tropical countries, their fermentation technique, and their functional properties and benefits for health and product quality.

BACKGROUND

This chapter describes various types of fermented animal food from tropical countries, which are sourced from livestock, fish, and other marine products. The themes presented in this chapter include the types and names of fermented foods, fermentation techniques, and their functional properties. Functional properties include the benefits for health when the food is consumed or benefits for the product development, specifically on flavor and sensory characteristics of the product.

The diversity of processed products contributes to the culinary richness of tropical countries, the majority of which are developing countries. This processed product is also an original ethnic food in tropical countries. Knowledge of the product contributes to food sustainability and serves as a consideration for the authorities in food policy. Therefore, the theme of this chapter is closely related to the theme of the proposed book, namely Food Sustainability, Environmental Awareness, and Adaptation and Mitigation Strategies for Developing Countries.

FERMENTED MEAT (PETIS)

Meat fermentation is quite popular so far, this product is a product of microbial activity in meat-based media that produces distinctive aroma or flavor characteristics. In America, it is known as pepperoni, which is a fermented sausage for pizza, which