

Efforts to Increase The Nutritional Value and Performance of Catfish Meatballs (*Pangasius Sp.*) with The Addition of Carrageenan and Moringa Flour

Muliadi ^{1,a}, Kasma F.Amin ^{2,a}, Siti Maryam ^{3,b}

^a Faculty of Literature, Universitas Muslim Indonesia, Makasar, Indonesia

^a Faculty of Pharmacy, Universitas Muslim Indonesia, Makasar, Indonesia

*

Abstract. Tuak drink is sap water that has undergone a fermentation process to produce alcohol, sugar and acetic acid. This study aims to determine the effect of storage conditions and the addition of preservatives for sweet wine (*Arenga pinnata*) on pH and bacterial growth. The sweet wine drink is obtained from the Laja farmer group located in Tompobulu Village, Tompobulu District, Maros Regency. The research method was carried out experimentally in the laboratory by measuring pH and bacterial growth after being conditioned at 25, -5 and -20 °C and adding 0.1% sodium benzoate preservative which was carried out for 14 days. Based on the results of measurements of the pH of the palm wine sample with the addition of preservatives, it showed that at -5 °C storage conditions until the 14th day it remained stable at pH 7.0, while at -20 °C storage it tended to approach alkaline pH, namely 7.8 and storage conditions at 25 °C, the pH becomes acidic, namely 3.4. For samples without added preservatives, storage conditions at -20 and -5 °C showed a pH that tends to be alkaline, namely 8.0, while at 25 °C the pH becomes acidic, namely 3.5. For bacterial growth until the 14th day, the wine samples added and no preservatives showed the best results at a storage temperature of 25°C but the pH of the preparation on the 3rd day showed a drastic decrease with a value of 3.5 and a change occurred. color and smell. For storage conditions -5 °C, the growth of bacterial colonies was still present but not as much as when compared to storage at -20 °C and there was no change in color and odor. The data showed that there was no significant difference in pH and bacterial growth in palm wine added or not added with sodium benzoate preservative.

Keywords: Sweet Tuak Drink, Storage Time, pH and bacterial growth.