

ABSTRACT

Anggy Kusuma Wati, 24020222140087, “**Detection of Bioflavor Produced by Yeast Isolates from Mackerel (*Rastrelliger* sp.) with Phenylalanine Precursor**” (under the guidance of Endang Kusdiyantini and Sri Pujiyanto).

Bioflavor is a natural flavor compound produced through the metabolic activity of microorganisms, one of which is yeast, during the fermentation process. This study aims to analyze the ability of yeast isolates from mackerel (*Rastrelliger* sp.) in producing bioflavor, identify the characteristics of functional groups of metabolic compounds using Fourier Transform Infrared Spectroscopy (FTIR), and determine yeast isolates that have the potential to produce the best bioflavor. The study was conducted exploratively using four yeast isolates, namely AH 6.2, AH 6.4, AH 6.5, and AH 6.7. The research stages include biochemical characterization through sugar fermentation and catalase tests, measurement of growth curves on non-phenylalanine media and media with the addition of phenylalanine using a UV-Vis spectrophotometer with a wavelength of 600nm, and FTIR analysis of fermentation metabolites. The results showed that all isolates were able to ferment glucose, sucrose, and fructose, but were unable to ferment lactose, and showed positive results in the catalase test. The growth curve showed that the addition of phenylalanine increased the growth activity of yeast isolates, with isolate AH 6.4 showing the highest absorbance value approaching 1.0 at the 12th hour. The results of FTIR analysis showed the presence of main functional groups in the form of hydroxyl (O–H), aliphatic C–H, carbonyl (C=O), and C–O groups which indicated the presence of alcohol, ester, aldehyde, and organic acid compounds resulting from fermentation metabolism. Based on the characteristics of the FTIR spectrum and growth pattern, isolate AH 6.4 showed the best potential in producing bioflavor because it had a clearer peak intensity of carbonyl and C–O groups compared to other isolates.

Keywords: bioflavor, yeast, fermentation, phenylalanine, FTIR.