

## ***ABSTRACT***

Haiqa Ayza Kiranawanti, 240201211401205, “*Isolation and Identification of Lactic Acid Bacteria (LAB) and Yeast Producing Aromatic Compounds in Glutinous Rice Tape (Oryza sativa Linn. Var glutinosa).*” Under the guidance of Agung Suprihadi and Arifa Rizqi Nafisa.

Tape is a traditional fermented food involving yeast and lactic acid bacteria (LAB). These microbes produce secondary metabolites such as esters, aromatic alcohols, and aldehydes through biotransformation, which play a role in forming the distinctive aroma of sticky rice tape. This study aims to explore the role of yeast and LAB in influencing the aroma quality of tape. The methods used include morphological observation, biochemical tests, and GC-MS analysis. The isolation results showed five yeast isolates suspected to be from the genus *Saccharomyces*, with round colonies, flat edges, flat elevations, and a whitish cream color. Six LAB isolates suspected to be from the genera *Streptococcus* and *Leuconostoc*, with round, cream-colored, and Gram-positive cell morphology. The carbohydrate fermentation test showed that all yeast isolates were able to ferment glucose and sucrose, but not lactose. All yeast isolates were also able to grow on 50% GYP media, indicating tolerance to osmophilic conditions. The catalase test showed that LAB isolates were negative, while yeasts were positive. Six LAB isolates were identified, all of which were non-spore-forming and capable of fermenting carbohydrates. GC-MS results showed that the six isolates produced 78 volatile compounds, primarily esters and benzene. Isolate BH produced the most compounds (19), while BP produced the least (7). The dominant compound found was 2-phenylethanol, which has a distinctive rose aroma and belongs to the aromatic alcohol group.

**Keywords:** *volatile organic compounds, sticky rice tape, yeast, lactic acid bacteria, GC-MS.*