

## **Identification of Microorganisms Ecoenzymes based in Fruit and Vegetable**

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### **ABSTRACT**

Ecoenzymes are products of processing organic waste, especially from fruit and vegetable waste. This ecoenzyme was first introduced in Thailand, but in Indonesia research on ecoenzymes is still limited. This study aims to identify microorganisms that play a role in degrading fruit and vegetable-based organic waste into ecoenzymes.

This type of research is an exploratory research. Microorganisms in ecoenzymes from fruit and vegetable waste are characterized and identified by testing in the laboratory using certain media such as Sodium Agar (NA), Nutrient Broth (NB), hydrogen peroxide solution (H<sub>2</sub>O<sub>2</sub>), Lactose media, Glucose media, media Starch Agar (SA), and Carboxymethyl cellulose (CMC) media. The test results were matched using a microorganism identification book, namely Bergey's Manual of Determinative Bacteriology 9th Edition to find the type of microorganism to the genus level. Isolation and identification of bacteria was carried out through Multilevel Dilution and Purification, colony morphology characteristics, cell morphology characteristics such as gram staining, physiological tests such as motility tests, oxygen demand tests and catalase tests, starch hydrolysis, sugar fermentation (glucose and lactose) and Carboxymethyl Cellulose (CMC)

The results of this study can provide an alternative for waste management, especially fruit and vegetable waste into ecoenzyme products that have multipurpose functions and at the same time can reduce the accumulation of organic waste, especially fruit and vegetable waste. The results of the identification of microorganisms in the ecoenzymes were found to be bacteria and molds, where these bacteria and molds were able to degrade vegetable waste and fruit peels into ecoenzymes that have multifunctions, both as floor cleaners, fertilizers and perfumes with the addition of certain flowers.

Kata Kunci: *Ecoenzymes, fruit peel waste, vegetable waste, microorganisms*