

## ABSTRACT

Pectinase is an enzyme that hydrolyses pectin, a major component of plant cell walls, into simple monomers. This enzyme is found in many plants and bacteria, one of which is endophytic bacteria that are able to produce pectinase on a large scale in a short time. Endophytic bacteria are bacteria that live in plant tissues and live in mutualism, where one of the sources is the waru plant. Previously, endophytic bacteria from waru trees were found to produce enzymes such as protease, amylase, and cellulase. This study aims to isolate pectinase from endophytic bacteria, as well as test and characterise its activity. This research was carried out in stages with bacterial rejuvenation, confirmation of phenotypic identity by gram staining, screening, making growth curves, pectinase production in the exponential phase, pectinase activity test with DNS reagent, pectinase characterisation based on temperature, pH, and incubation time, and pectinase specific activity test with the *Lowry* method. The results of the study obtained crude extract of pectinase, data from the characterisation of the optimum temperature of pectinase is 37°C, the optimum pH of bacterial pectinase Z3, Z10, WK, WR is 7, while bacterial Z8 is optimum at pH 6. The optimum incubation time of bacteria Z3, Z18, Z10, WK is 30 minutes, while bacterial WR optimum incubation time is 20 minutes. The test results of pectinase activity under optimal conditions in all test bacteria with the highest pectinase activity and specific pectinase activity obtained in Z3 bacteria were 66.742 Units/mL and 112.238 Units/mg.

**Keywords :** Pectinase, endophytic bacteria, enzyme, activity