

ABSTRACT

Puspita Sari, Mega. 2014. Isolation of thermophilic amyolytic bacteria From Hot Pacet Mojokerto And Testing Amylase Enzyme Activity. Thesis. Department of Biology, Faculty of Science and Technology of the State Islamic University of Maulana Malik Ibrahim Malang. Supervisor 1: Anik Maunatin M.P. and Supervisor 2: Mujahideen Ahmad M.Sc

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Thermophilic bacterium is a type of bacteria that are able to live at high temperatures because it has a stable cell membranes, and proteins that are resistant to denaturation. Thermophilic bacteria can produce enzymes by nature resistant to high temperature called thermostable enzyme. One type of this enzyme, the enzyme amylase is widely used by humans in the industrial field. This enzyme has a longer shelf life and higher activity at high temperatures. Amylase enzyme can be obtained from several organisms, one of that is bacterium. The purpose of this study to isolate and identify thermophilic amyolytic bacteria and to know amylase enzyme activity of the water source heat Pacet Mojokerto.

This study consisted of three phases, the first phase is a qualitative test isolate amyolytic bacteria by dripping the isolates were grown in a medium containing starch with iodine, the second phase is selected isolates identified by test mikrobact 12 A / E, and the last stage is a quantitative test by measuring the activity enzyme obtained from the analysis of glucose using the 3.5-dinitrosalisilat (DNS)

The ability of bacterial isolates in hydrolyze starch, it is shown by the presence of a clear zone around the colony after drip with iodine. Three isolates were selected by the results of the largest clear zone that is isolates A5 clear zone diameter 15 mm, isolates A1 by 13 mm and isolates A3 by 10 mm. Results of identification with mikrobact 12A / E indicates that isolates A1 and A5 is the type species of *Enterobacter agglomerans* and isolates A3 is a species of *Escherichia coli*. Test results amylase enzyme activity in isolates that have the highest value activities on isolates A5 by 1,664 U / mL, then isolates A3 by 0.855 U / mL and the smallest A1 isolates by 0.419 U / mL.