

Screening and Characterization of Phosphate Solubilizing Bacteria From Isolate Of Thermophilic Bacteria After Merapi Eruption

by Evy Yulianti, Anna Rakhmawati

ABSTRACT

The aims of this study were to select bacteria that has the ability to dissolve phosphate from thermophilic bacteria isolates after the Merapi eruption. Five isolates of selected bacteria was characterized and continued with identification. Selection was done by using a pikovskaya selective medium. Bacterial isolates were grown in selective medium and incubated for 48 hours at temperature of 55 ° C. Characterization was done by looking at the cell and colony morphology, physiological and biochemical properties. Identification was done with the Profile Matching method based on the reference genus *Oscillospira* traced through Bergey's Manual of Determinative Bacteriology. Dendogram was created based on similarity index S_{SM} . The results showed there were 14 isolates of bacteria that were able to dissolve phosphate indicated by a clear zone surrounding the bacterial colony on selective media. Five isolates were selected with the largest clear zone. Isolates D79, D92, D110a, D135 and D75 have different characters. The result of phenotypic characters identification with Genus *Oscillospira* profile has a percentage of 100% similarity to isolate D92 and D110a; 92.31% for isolates D79, and 84.6% for isolates D75 and D135. Dendogram generated from average linkage algorithm / UPGMA using the Simple Matching Coefficient (S_{SM}) algorithms showed, isolate thermophilic bacteria D75 and D135 are combined together to form cluster 1. D110a and D92 form a sub cluster A. Sub cluster A and D79 form cluster 2.

Kata Kunci: *Keywords: phosphate solubilizing bacteria , screening, characterization*