ABSTRACT

THE EFFECT OF CARBON SOURCES ON METABOLITE PRODUCTION ANTIBACTERIAL OF *Bacillus tequilensis* BSM-F SYMBIOTIC *Halichondria panicea* FROM CABBIYA MADURA SEAWATER

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The study effect of carbon source on metabolite production antibacterial by *Bacillus tequilensis* BSM-F was done by using solid state fermentation. The production of antibacterial metabolites is influenced by nutrients in the production medium. So in this study, the addition of carbon sources on ZMA media as energy for bacteria to produce antibacterial metabolites. Sources of carbon used are glucose, glycerol, lactose, and starch with each 1% w/v concentration. Addition of carbon sources with 1% w/v concentration to the medium showed different effects on antibacterial metabolite production by *Bacillus tequilensis* BSM-F. The antibacterial metabolite activity was declarated by activity index. So among all the carbon sources tested, gliserol yielded the highest antibacterial activity index. Activity index is the comparisson between inhibiton zones and colony of bacteria. The next step is to optimize the concentration of glycerol carbon source. Optimization of glycerol concentration to be tested at concentrations of 0,5%, 1%, 1,5%, 2%. All concentrations has been tested, glycerol 1,5% w/v concentration yielded the highest antibacterial activity index.

Keywords: antibacterial activity, *Bacillus tequilensis* BSM-F, *Halichondria panicea*, carbon source