

ABSTRACT

OPTIMIZATION OF NITROGEN SOURCE ON ANTIBACTERIAL METABOLITE PRODUCTION OF *Bacillus tequilensis* BSM-F SYMBIOSIS *Halichondria panicea* FROM CABBIIYA MADURA SEAWATER

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Bacteria that symbiosis with sponge have been extensively researched because it can produce antibacterial metabolite, including *Bacillus tequilensis* BSM-F symbiosis *Halichondria panicea* from Cabbiiya Madura Seawater. *Bacillus tequilensis* BSM-F in producing antibacterial metabolites is influenced by several factors, one of which is media. The purpose of this study was to determine the type and concentration of optimum nitrogen sources as a medium for the production of *Bacillus tequilensis* BSM-F symbiosis of *Halichondria panicea*. The method used in the production of *Bacillus tequilensis* BSM-F is solid fermentation, while the antibacterial activity test against *Staphylococcus aureus* ATCC 25923 and *Eschericia coli* ATCC 25922, which respectively represent Gram positive bacteria and Gram negative bacteria using agar diffusion method. Based on the results of the research conducted, the nitrogen source that can produce the optimum antibacterial metabolite is casein with a concentration of 1.5%.

Keywords: Antibacterial activity, *Bacillus tequilensis* BSM-F, *Halichondria panicea*, nitrogen source