ABSTRACT

OPTIMIZATION pH AND TEMPERATURE OF ANTIBACTERIAL METABOLITE PRODUCTION *Bacillus tequilensis* BSMF SYMBIOSIS *Halichondria panicea* FROM THE WATERS OF CABBIYA MADURA VILLAGE ON PDA MEDIA

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Microorganisms especially sponges-associated bacteria are widely investigated because they can produce antibacterial metabolites, including *Bacillus tequilensis* BSMF isolated from *Halichondria panicea*. The production of antibacterial metabolites is influenced by components of growth media, environmental physicochemical factors such as pH, temperature, media, dissolved oxygen conditions, and production time. This research aims to determine pH and optimum temperature of antibacterial metabolites production from *Bacillus tequilensis* BSMF symbiosis *Halichondria panicea* in Potato Dextrose Agar (PDA) media. The solid fermentation method was used in the production of *Bacillus tequilensis* BSMF antibacterial metabolite, while the antibacterial activity test for *Bacillus tequilensis* BSMF against *Staphylococcus aureus* ATCC 25923 and *Eschericia coli* ATCC 25922 used agar diffusion method. The result shows that the optimum pH was reached at pH 8±0,5 and optimum temperature was attained at 32±1^{o}C.

Keywords: antibacterial, *Bacillus tequilensis* BSMF, *Halichondria panicea,* pH, temperature