

## ABSTRACT

### THE INFLUENCE OF MOLASSES – TOFU WASTE ADDITION IN FERMENTATION MEDIUM TO THE ANTIBIOTIC ACTIVITY OF *Streptomyces antibioticus*

Astrid Aulia Hamida

The purpose of this study was to observed molasses and tofu waste usage as the component of the fermentation medium of *Streptomyces antibioticus* which has antibacterial activity and to determine ratio of molasses and tofu waste that give the biggest antibacterial activity. Molasses and tofu waste used in media to replace carbon and protein source in standard medium ISP-4.

The first step in this research was regenerated *Streptomyces antibioticus*, after two days the bacteria being prepared in a 100 mL flask as a starter. 10% starter inoculated into 9 kinds of ISP-4 modified medium containing molasses and tofu in various concentrations and isp-4 as standard medium. Fermentation ran for 5 days in thermo shaker 150 rpm, at temperature 26-28°C. Fermentation broth samples were collected every 24 hours. The antibacterial activity against *Eschericia coli* ATCC 25922 was measured by using agar diffusion method.

The result showed that molasses and tofu waste could be added as the component of fermentation medium of *Streptomyces antibioticus* replaced amilum as the carbon source and ammonium sulfate as the protein source in standard medium ISP-4. The antibacterial activity expressed as a diameter of inhibitory zone. The largest inhibitory zone (24,4 mm) against *Eschericia coli* ATCC 25922 obtained from ISP-4 modified media contained molasses 0,5% : tofu waste 0,5% after 2 days of incubation.

**Keywords:** molasses, tofu waste, *Streptomyces antibioticus*, fermentation medium.