

ABSTRACT

Muhibbah, Rohmatin. 2011. **Potential of *Lactobacillus plantarum* as probiotic the *in Vitro*: A Study of Resistance Against Acid, Bile Salts and Inhibition of Pathogenic Bacteria**. Skripsi. This study was guided by: Retno Susilowati, M.Si, Dr.Ahmad Barizi, M.A dan Anik Maunatin, M.P.

Key words : *Lactobacillus plantarum*, probiotic, *in vitro*

Progressively expanding awareness of the society about health, nowadays food claimed to have high nutrition and have to have worthwhile value to body. One kind of developing food today is probiotics. Aim of this research is to know potential of *Lactobacillus plantarum* as probiotic.

This research was conducted at the Laboratory of Microbiology, Department of Biology, Faculty of Science and Technology, Islamic State University Maulana Malik Ibrahim of Malang. From September to December 2010. The research method used is descriptive method of experiment which aims to provide information about the potential of probiotic *Lactobacillus plantarum* with the *in vitro* testing of the study resistance to acids, bile salts 0.3% (w/v) and inhibition of pathogenic bacteria, namely *Staphylococcus aureus*, *Escherechia coli* and *Salmonella thypi*.

Data obtained from this study were analyzed descriptively. The results showed that as pH increased the number of *Lactobacillus plantarum* living increases. The average number of *Lactobacillus plantarum* grown at pH 2 is $2,7 \cdot 10^7$ cfu/ml, at pH 3 of $3 \cdot 10^7$ cfu/ml and at pH 4 as much as $4,9 \cdot 10^7$ cfu/ml, while in control as much as $5,3 \cdot 10^8$ cfu/ml. *Lactobacillus plantarum* resistance test result of 0.3% bile salt (w/v) showed that *Lactobacillus plantarum* has the resistance to bile salts 0.3% (w/v). The average number of *Lactobacillus plantarum* growing was $5,5 \cdot 10^9$ cfu/ml, while in control as much as $2,9 \cdot 10^{10}$ cfu/ml. The results inhibition of *Lactobacillus plantarum* against pathogenic bacteria indicates that the average inhibition diameter of *Staphylococcus aureus* about 6,3 mm, the average inhibition diameter of *Salmonella typhi* about 4 mm and the average inhibition diameter of *Escherecia coli* about 3,3 mm.

