

ABSTRACT
ANTIBACTERIAL ACTIVITY OF MILK PROBIOTIC
***Lactobacillus paracasei* ATCC BAA52 AND MADU RANDU**
(*Ceiba pentandra*) COMBINATION AGAINST
Streptococcus mutans

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Streptococcus mutans is a Gram-positive bacterium considered as the main pathogenic bacteria that cause dental caries. Dental caries can be prevented in various way such as inhibit the growth of cariogenic bacteria. The *randu* honey and probiotic milk of *Lactobacillus paracasei* had antibacterial activity that has been proven in various studies. The objectives of this study were to determine MIC of *randu* honey and probiotic milk of *L. paracasei*, to discover the optimal ratio combination of *randu* honey and probiotic milk of *L. paracasei* that generate maximum of antibacterial activity and to determine the MIC of above-mentioned combination. The antibacterial activity test was performed with agar well- diffusion method. The samples used in this study were *randu* honey, probiotic milk of *L. paracasei* and the combination of those samples in various ratio (1:9,2:8, 3:7, 4:6, 5:5, 6:4, 7:3, 8:2, 9:1). The results showed that the MIC of *randu* honey was the concentration of 15% with average value of inhibition zone diameter as $11,55 \pm 0,82$ mm, while the MIC of *L. paracasei* probiotic milk was 55% with $10,65 \pm 0,30$ as the average value of inhibition zone diameter. The optimal ratio of the combination was 9:1 that consisted of 50% concentration of *randu* honey and *L. paracasei* probiotic milk $21,85 \pm 0,22$ mm as the average value of inhibition zone diameter. The MIC of the optimal ratio combination was 25% with $11,91 \pm 0,84$ mm as the average value of inhibition zone diameter.

Keywords: antibacterial activity, *Lactobacillus paracasei*, probiotic milk, *randu* honey, *Streptococcus mutans*