ABSTRACT

Adrian Hartanto Kencana (03420110039)

APPLICATION OF MELINJO PEEL BASED FERMENTED BEVERAGE AS ANTI-GOUT ON WISTAR RATS.
(xiv + 69 pages: 11 figures, 6 tables, 21 appendices)

Melinjo peel contains bioactive compounds, namely phenolic and flavonoid compounds, which can reduce uric acid levels in the bloodstream and urine. The objective of this research was to determine the effect of melinjo peel based fermented beverage toward the uric acid levels in the bloodstream and urine of wistar rats. The fermented beverage was prepared with cultures of Streptococcus thermophilus, Lactobacillus plantarum, and Lactobacillus fermentum with ratio of 2:1:1, 4% (v/v). The fermented beverage was made with different concentrations of melinjo peel (2, 4, 6, 8, 10, 15%), sugar (5, 6, 7, and 8%), and skim milk (4, 5, 6, and 7%). The products were fermented for 12 hours and were analyzed for pH, total titratable acidity, and total lactic acid bacteria. The result showed that based on these parameters, the best formulations were 2% melinjo peel, 5% sugar, and 4% skim milk. The products were then given to wistar rats to determine the effect of the fermented beverage to the uric acid levels in the bloodstream and urine. The result showed that the chosen formulations were able to decrease uric acid levels in the bloodstream and urine of the wistar rats in contrast with the control. The 2% melinjo peel treatment was able to reduce the uric acid level as much as 24.70±1.40% in the bloodstream and 30.45±0.97% in the urine, whereas the 4% melinjo peel treatment was able to reduce the uric acid level as much as 36.76±1.22% in the bloodstream and 53.77±0.76% in the urine. On the other hand, allopurinol was shown to reduce the uric acid level as much as 48.78±2.20% in the bloodstream and 56.32±1.29% in the urine. In conclusion, melinjo peel based fermented beverage is able to reduce uric acid levels in the bloodstream and urine of wistar rats although not as effective as allopurinol.

Keywords: Melinjo peel, fermented beverage, uric acid, wistar rats, allopurinol