

## **Influence of *Pediococcus Pentosaceus* Isolate “Dadih” (Buffalo Milk Fermented in Bamboo) the Bowel Frequency, Secretory Immunoglobulin a Level and Height of Ileum Villi of the Mice EPEC Induced Diarrhea**

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**Abstract :** The aim of this study is Enteropathogenic *Escherichia coli* O157 (EPEC) is one of the pathogen that can cause inflammation and damage intestinal mucosa, which is leading diarrhea. Inflammation in the intestinal mucosa proved by the presence of secretory Immunoglobulin A (sIgA) on the feces. Isolate dadih is *Pediococcus pentosaceus* (*P. pentosaceus*) as a probiotic lactic acid bacteria (LAB) is very usefull to improve sIgA and intestinal mucosa. The objective, to determine the dose and duration administration of *P. pentosaceus* for bowel frequency, sIgA level and height of illeum villi in mice EPEC-induced diarrhea. Method, using Complete Randomized design studies in mice EPEC-induced diarrhea. Mice was classified into 2 factors. A factor (dose of probiotic) and B factor (duration of probiotic observation) consisted of 0 hour, 12 hours, 24 hours and 36 hours. A factor consisted of negative control, positive control (mice induced by EPEC) and 3 different dose experimental mice. The results were a very significant interaction between dose and duration administration of *P. pentosaceus*. Mean of the most frequent defecation of mice EPEC-induced was 55 graetly reduced into 12 ,after 24 hours administration *P. pentosaceus* dose  $2 \times 10^{10}$  cfu/g, Mean of sIgA level of mice induced EPEC was 1,60  $\mu\text{g/ml}$ , very significant different ( $p < 0,01$ ). Mean of sIgA level after 24 administration *P. pentosaceus* dose  $2 \times 10^{10}$ cfu/g was 2,65  $\mu\text{g/ml}$ . Mean of height of illeum villi after induced EPEC 53,04  $\mu\text{m}$  with very significant different after 24 hours administration *P. pentosaceus* dose  $2 \times 10^{10}$ cfu/g (142,881 $\mu\text{m}$ ). This study concluded that *P. pentosaceus* dose  $2 \times 10^{10}$ cfu/g after 24 hours is very beneficial to reduced bowel frequency, increase sIgA level and improve the height illeum villi of mice EPEC-induced diarrhea.

**Keywords :** *Pediococcus pentosaceus*, sIgA, enteropathogenic *Escherichia coli* O157, diarrhea, illeum villi

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