

ISOLASI DAN KARAKTERISASI *Enterobacteriaceae* DARI UANG KERTAS SERTA UJI DAYA HAMBAT PERTUMBUHANNYA OLEH SABUN CUCI TANGAN CAIR

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ABSTRAK

Diare merupakan salah satu gejala penyakit yang disebabkan oleh infeksi *Enterobacteriaceae*. Penyebaran *Enterobacteriaceae* dapat melalui uang kertas yang beredar di masyarakat. Pada penelitian ini, dilakukan isolasi dan karakterisasi *Enterobacteriaceae* dari uang kertas Rp 1.000,00 serta uji daya hambat sabun cuci tangan cair yang dijual di pasar terhadap pertumbuhan bakteri yang diisolasi. Uang kertas Rp1.000,00 diperoleh dari dua pasar dan dua pemukiman di Surabaya dengan pengambilan sampel yang dilakukan secara acak. Jumlah bakteri pada uang kertas dipengaruhi oleh tempat dengan jumlah paling banyak berasal dari pasar ($1,7 \times 10^5$ CFU/ml dan $1,5 \times 10^5$ CFU/ml). Diperoleh enam genus *Enterobacteriaceae*, yaitu *Citrobacter*, *Enterobacter*, *Klebsiella*, *Serratia*, *Shigella*, dan *Yersinia*. Tempat asal uang kertas tidak mempengaruhi jenis *Enterobacteriaceae* yang terdapat pada uang kertas Rp 1.000,00. Pada uji daya hambat sabun cuci tangan cair, setiap jenis sabun yang berbeda memberikan daya hambat yang berbeda-beda terhadap pertumbuhan keenam genus *Enterobacteriaceae*. Sabun antiseptik L memiliki daya hambat paling besar dibandingkan dengan sabun uji lainnya. Tetapi ada juga sabun antiseptik (Sabun D) dan sabun non-antiseptik (Sabun Y) yang memiliki daya hambat yang hampir sama.

Kata kunci: isolasi, *Enterobacteriaceae*, uang kertas, daya hambat, sabun cuci tangan cair.

ISOLATION AND CHARACTERIZATION OF *Enterobacteriaceae* FROM PAPER MONEY AND IT'S INHIBITION TEST BY THE LIQUID HAND SOAP

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ABSTRACT

Diarrhea is a disease caused by *Enterobacteriaceae*. *Enterobacteriaceae* can be transmitted through paper money in the circulation. In this research, isolation and characterization of *Enterobacteriaceae* have been done from paper money. In addition, growth inhibition of the isolated *Enterobacteriaceae* by liquid hand soaps was tested. Sample of money was taken randomly from two markets and two residential area in Surabaya. Total bacteria in paper money were influenced by the place where the money came from. The highest number of bacteria was found in paper money came from the markets ($1,7 \times 10^5$ CFU/ml and $1,5 \times 10^5$ CFU/ml). *Enterobacteriaceae* isolated from paper money were *Citrobacter*, *Enterobacter*, *Klebsiella*, *Serratia*, *Shigella*, and *Yersinia*. No significant difference was observed in term of genus of *Enterobacteriaceae* found from different places. Growth inhibition test by the liquid hand soaps showed that different type of soap exhibited different inhibition to the six genus of *Enterobacteriaceae* growth. Antiseptic hand soap ("L"-soap) had the biggest inhibition. There are also antiseptic hand soap ("D"-soap) had similar inhibition with non-antiseptic hand soap ("Y"-soap).

Keywords: isolation, *Enterobacteriaceae*, paper money, inhibition, liquid hand wash soap.