OPTIMUM DOSAGE OF POLY ALUMINUM CHLORIDE (PAC) COAGULANT IN REDUCING BIOLOGICAL OXYGEN DEMAND (BOD) LEVELS IN SLAUGHTERHOUSE (RPH) PENGGARON SEMARANG

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Slaughterhouse is a building with certain designs and conditions as a place for the public to use or provide healthy meat. Liquid waste generated from production activities contains high organic matter, so that the level of Biological Oxygen Demand exceeds the threshold value which can cause environmental pollution. One method to reduce dissolved organic content is coagulation using Poly Aluminum Chloride. This study aims to determine the optimum dose of Poly Aluminum Chloride in reducing levels of Biological Oxygen Demand at the Penggaron Slaughterhouse Semarang. This research is a quasi-experimental with pretest and posttest with control group design. The population in this study was Slaughterhouse liquid waste and the total sample was 36 samples with 4 PAC doses (2.5 g, 5 g, 7.5 g, and 10 g). Data analysis using Kruskal Wallis test. The results of this study indicate that the average BOD levels before and after PAC use decreased linearly, in line with the increasing number of doses used. The lowest decrease in BOD levels was at a dose of 2.5 g/l PAC, while the highest decrease was at a PAC dose of 10 g/l. It can be concluded that the PAC dose of 10 g/l is the optimum dose in reducing BOD levels of liquid waste from Slaughterhouses, but it is not effective because it cannot reduce BOD levels to below the quality standard of Central Java Provincial Regulation No. 5 of 2012. Therefore, further research needs to be done by adding and combining the processing of the flocculation coagulation method using other methods.

Keywords : Slaughterhouse, Levels Biological Oxygen Demand, Poly Aluminum Chloride, Optimum Dose