

ABSTRACT

PEMANFAATAN KULIT PISANG KEPOK (*Musa paradisiaca* L.) TERAKTIVASI NaOH SEBAGAI ADSORBEN LOGAM TIMBAL (Pb) DENGAN VARIASI KONSENTRASI AWAL LARUTAN LOGAM TIMBAL (Pb)

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The development of the industrial sector in Indonesia is growing quite rapidly. Increased production activity in the industrial sector has a negative impact on reducing public health caused by pollution from industrial waste. One of the heavy metals that is often found in industrial wastewater and its disposal into the environment poses a serious threat due to its toxicity, namely lead (Pb). Therefore, efforts to reduce heavy metals are needed. One method that can be used is adsorption. Adsorption is a method that is widely used because the design is simpler, easy to apply, economical and does not cause toxic side effects

In this study, the Kepok banana peel was first processed into a powder form which was then activated with NaOH. Used 1.5 grams of Kepok banana peel powder activated NaOH and 50 ml of Pb solution with various concentrations of 30 ppm, 40 ppm, 50 ppm, 60 ppm and 70 ppm. Research on variations in the initial concentration of Pb solution was carried out at pH 5 for 30 minutes at a speed of 240 rpm. Then filtered to obtain the filtrate. The filtrate was then measured the final metal concentration using an Atomic Absorption Spectrophotometer. The results obtained in the form of levels (ppm) of Pb metal which is not adsorbed by the Kepok banana peel. Furthermore, the data is processed into adsorption capacity and used as a graph so that the highest adsorption capacity is known. This result is referred to as the optimum adsorption capacity.

Based on the research that has been done, the highest adsorption capacity occurred at a concentration of 70 ppm, the adsorption capacity reached the maximum value with the adsorption capacity value of 6.1708 mg/gram. While at a concentration of 30 ppm, the minimum value of adsorption capacity is 1.9231 mg/gram. So it can be concluded that Kepok banana peel can be used to reduce Pb metal content from a solution.

Keywords: Adsorption, lead, Kepok banana peel, adsorption capacity.