ABSTRACT

CONTACT TIME OPTIMIZATION OF LEAD (Pb) ADSORPTION USULY KEPOK BANANA PEEL WASTE BIO-ADSORBENT (*Musa acuminate* L.) (Contact Time 90, 105, 120 and 135 Minutes)

Lea Fatra Cahya Sheila Kamilin

Lead metal is a pollutant that is dangerous and toxic because it is bioaccumulative and easily absorbed by the body. As a result of exposure to lead contamination, it can cause health problems, such as neurological disorders that can cause death. The purpose of this research was to find out at how many minutes the adsorption process of Pb metal using kepok banana peel biosorbent could be achieved. One method that can be done to reduce lead contamination is the adsorption method using kepok banana peel biosorbent which is cheap and more effective in adsorbing metals, besides that this research is also a form of waste processing of banana peel waste which is found a lot. This study consisted of two stages, namely the preparation of the adsorbent and the optimization of the contact time with variations of 90, 105, 120 and 135 minutes.

The adsorbent preparation for kepok banana peels was prepared through a process of washing, drying, grinding and sieving to obtain an adsorbent of uniform size. The next step is to optimize the contact time which aims to determine the optimal time for the adsorption process. Variations of contact time used are 90, 105, 120, and 135 minutes. The results obtained from this study stated that the longer the contact time, the higher the adsorption percentage value. This test shows that the optimal time is in the 135th minute with a % adsorption value of 91.9183%. Then the results obtained were processed using the One-Way Annova test, it was found that the dependent variable and the independent variable did not have a significant effect between the percentage of adsorption and contact time.

Key word: Lead, Adsorption, Kepok banana peels, Contact time