

ABSTRACT

THE EFFECT OF pH VARIATIONS ON ADSORPTION OF Pb USING DIFFERENT FRUIT PEEL ADSORBENTS

Adi Wijaya Putra

Today, water pollution is a very serious problem. One of the causes of water pollution is heavy metals, such as Pb, Cd, Cu, Cr, Hg, and As. These metals come from industrial activities such as metal mining, metal plating and mixing, leather tanning, paint, dyeing, batteries, ceramics and weapons production. Because it is toxic and difficult to decompose, this metal can accumulate in the food chain, and can cause disturbance to the environment and living things. Therefore, the processing and removal of heavy metals from the environment is very necessary. One alternative technique that has been widely developed to separate heavy metal ions from wastewater is to utilize the ability of several plant biomaterials such as pea skins, orange peels, coconut shell powder and rice bran as adsorbents of heavy metal ions and dissolved radionucleotides from wastewater. This process is then called biosorption. This study aims to determine the effect of variations pH on the adsorption of Pb using adsorbents of several types of fruit with Tangerine Peel, Watermelon Peel, and Areca Peel.

This research method is *literature review*. Researchers searched for manuscripts through official databases and library sources relevant to the research topic. The databases used include *Researchgate* and *Google Scholar*. Searching for manuscripts that were found and relevant, namely by means of a systematic search process from libraries and online catalogs, subject field encyclopedias, periodic indexes, and abstracts (*scanning*), identifying important information or ideas by speed reading and examining the potential of material that is appropriate to the researcher (*skimming*), and techniques for organizing information (*mapping*).

Based on the results of a *literature review* study of 3 articles, it shows that fruit peel waste can be used as an adsorbent, where variations pH affect the adsorption of Pb. The optimum pH for using Tangerine peel as an adsorbent is 4, for using watermelon skin as an adsorbent is 4, and 6 for using areca nut peels as an adsorbent. It can used as an alternative to using other fruit peel wastes as adsorbents and other parameters than pH variation are used as variables in the next literature review.

Keywords: *Pb, adsorption, pH variation*