

## **ABSTRACT**

### ***(LITERATURE REVIEW)***

#### **THE EFFECT OF CONTACT TIME VARIATIONS ON ADSORPTION OF METAL CADMIUM (Cd) USING ADSORBENTS OF SEVERAL TYPES OF FRUIT PEELS**

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One example of a very dangerous heavy metal is cadmium metal (Cd). Cd is a highly toxic metal, commonly found in the plating, paint, and battery manufacturing industries. Fruit peel waste can be used as an alternative source of adsorbent because it contains pectin and cellulose. The purpose of this literature review is to determine the optimum contact time required to adsorb heavy metal cadmium (Cd) using Siamese orange peel (*Citrus reticulata*), Watermelon rind (*Citrullus lanatus*), and betel nut peel (*Areca catechu*).

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 Indonesia One Search and Google. 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), techniques for organizing information (mapping).

Based on the results of a literature review study of 3 articles, it showed that fruit peel waste can be used as an adsorbent, where variations in contact time affect the adsorption of cadmium metal (Cd). The optimum contact time for using Siamese orange peel to absorb lead was 60 minutes with an absorption percentage of 99.18% with an absorption capacity of 4.959 mg/g. For watermelon rind as an adsorbent the optimum contact time was 30 minutes with an initial concentration of 10 mg/L to 0.545 mg/L, a decrease of 9.455 mg/L (94.55%) occurred when using betel nut peel as an adsorbent for the optimum contact time. For metal Pb(II) is 75. Meanwhile, the optimum concentration of biosorption occurs at a concentration of 50 ppm.

Keywords : Contact time, adsorbent, fruit peel