ABSTRACT

Eltari, Yulias. 2013. **Effect of Concentration and Soaking Length in a Solution of Lime (Citrus Aurantifolia Swingle) Against the Decrease of Heavy Metal Content of Mercury (Hg), Cadmium (Cd) and Lead (Pb) in White Mussels (Corbula faba Hinds).** Thesis. Department of Biology, Faculty of Science and Technology, State Islamic University of Maulana Malik Ibrahim Malang. Supervisors: (I) Dr. Evika Sandi Savitri, M.P. (II) Umaiyatus Syarifah, M.A.

Keywords: Lime (*Citrus aurantifolia Swingle*), Mercury (Hg), Cadmium (Cd), Lead (Pb), White Mussels (*Corbula faba Hinds*)

White Mussels (*Corbula faba Hinds*) are vulnerable to be contaminated by heavy metal mercury (Hg), cadmium (Cd) and lead (Pb). That is because their lifes are sessile in the substrate waters. They contain high protein and many people love them very much. Thus, it is important to reduce the content of heavy metals in white mussels (*Corbula faba Hinds*) by using a solution of lime (*Citrus aurantifolia Swingle*). This study aimed to determine the effect of concentration and time of immersion in a solution of lime (*Citrus aurantifolia Swingle*) to the decline of heavy metals mercury (Hg), cadmium (Cd) and lead (Pb) in the White Mussels (Corbula faba Hinds) and their organoleptic value.

The sample of White Mussels (*Corbula faba Hinds*) is obtained from the river mouth at Ketingan Candi district, Sidoarjo regency. White-meat mussels (*Corbula faba Hinds*) soaked with a solution of lime (*Citrus aurantifolia Swingle*) concentration of 15%, 20% and 25%, with the soaking time variations 30, 60 and 90 minutes. The researcher then, conducted the heavy metal analysis at the Laboratory of Chemistry, Muhammadiyah University of Malang. Then, 15 panelists took part in an organoleptic test to determine the level of liking for flavors of white mussels (*Corbula faba Hinds*) after immersion in a solution of lime (*Citrus aurantifolia Swingle*). This study is an experimental study, and the data were analyzed using factorial ANAVA and followed by Duncan range test.

The ANAVA calculation results showed that the concentration of lime solution and the immersion time have significant effect in reducing the heavy metal mercury (Hg), cadmium (Cd) and lead (Pb) in the white mussels (*Corbula faba Hinds*). The concentration of lime solution 25 % with the duration of 90 minutes has the greatest effect in decreasing the heavy metal mercury (Hg), cadmium (Cd) and lead (Pb). Concentration of 25% solution of lemon juice for 90 minutes can reduce the heavy metal mercury (Hg) at 0,211 ppm (70.33%), 0,324 ppm (53.73%) in the heavy metal cadmium (Cd), and 0.933 ppm (55.53 %) in the heavy metal lead (Pb). Furthermore, the result of organoleptic assessment showed that the concentration of 25 % with duration of 90 minutes produced White Mussels with the highest level of organoleptic score, with 53.3 % of panelist.