ABSTRACT

Water and air are abiotic components that have very important roles for the life of the aquarium ecosystem. While coral is a biotic component called 'rainforest' in aquatic ecosystems where many fish shelter, reproduce and raise their children in the nooks and crannies formed by coral. Unfortunately, in Indonesia sea corals are illegally harvested and exported to aquarium shops for decoration. Therefore, a simple innovation is needed to fulfill the abiotic components and replace the sea coral in the aquarium with artificial corals that can produce oxygen and purify the water. Thus, this research used zeolite, slaked lime which reacted with H_2O_2 and gypsum as binder to form oxygen-producing materials as well as water purifiers and can replace sea corals as decorations in aquariums. Based on the texture, the number of oxygen bubbles produced and the sturdiness in water, the good ratio of zeolite; slaked lime; and gypsum for making artificial coral is 1:1:2. Furthermore, the aquarium water that has been treated with artificial corals was then tested for physical water (temperature, pH, organoleptic), every hour for 3 hours of observation, then the amount of dissolved oxygen and the value of total suspended solids was measured. From this research, it was found that the temperature was relatively constant at room temperature around 26-27^{o}C, making it safe for fish. Then, pH was also constant at pH 8.3 which is good for fish growth. Furthermore, the amount of dissolved oxygen was found to increase from 6.53 mg/L to 16.73 mg/L and the total suspended solids value decreased by 0.02 after one hour in 100 mL of aquarium water samples.

Keywords: *aquarium, slaked lime, zeolite, total suspended solids, dissolved oxygen*