CONCENTRATION OF Pb, Cu AND Zn
BIVALVES AND SHRIMP IN THE COASTAL KENJERAN SURABAYA AND BORDERS SAFE CONSUMPTION

ABSTRACT

The objectives of this study are to determine the bioaccumulation of Pb, Cu and Zn in the bivalves and shrimps from coastal waters of Kenjeran Surabaya, and to evaluate the safe limit of consumption. This study is an observational research, and heavy metal contents were analyzed using Shimadzu AAS type A7000. The highest Cu concentrations were found in whole body tissue of shrimp (30.998 mg.kg⁻¹) and the lowest Cu concentration in the tissue of lorjuk (0.190 mg.kg⁻¹). The highest Zn concentrations were found in tissue of cockle (30.771 mg.kg⁻¹) and the lowest concentration of Zn in whole body tissue of shrimp (6.740 mg.kg⁻¹). Pb concentrations of all samples are below the detection limit. The levels of Pb and Zn are below the maximum limits of metal contaminants in food, while the Cu in the shrimp (whole body) is above the maximum limit of metal contamination in food. Safe limit of consumption of Cu for the cockle, mussels, lorjuk, shrimp flesh and the whole body of shrimp per week are 34 Kg, 45 Kg, 44.8 Kg, 13 Kg and 6.7 Kg respectively, and the safe limits of consumption of Zn are 13.6 kg, 22.8 kg, 22.4 kg, 25 kg, and 27.5 Kg respectively.

Key words: bioaccumulation, bivalves, shrimp, safe limits of consumption, coastal waters Kenjeran Surabaya