

LEAD CONTENT ANALYSIS IN FISH AS EARLY WARNING SYSTEM FOR FOOD SAFETY IN RAWA BANGKAU WATERS OF SOUTH KALIMANTAN

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Abstract

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The ecosystem of Rawa Bapai waters is located in the western part of Hulu Sungai Selatan Regency. However, community living near upstream also carries out agricultural, plantations and household activities. The increase in the liquid waste cannot be separated from the community's habits/behaviour to dispose of all waste of a place for bathing and washing as well as serving as a lavatory (toilet), kitchen, bottles/containers of pesticides into the water because of easiness and the absence of facilities. Some of these activities cause pollution, one of which is heavy metal lead (Pb). Heavy metal lead is one of the toxic pollutants that can cause death (lethal) and non-death (sublethal), such as disruption of growth, behaviour and morphological characteristics of various aquatic organisms. Moreover, fish exposed to the lead is consumed by humans as a food source of animal protein. The purpose of this study was to analyze the lead content in various fish in the waters of Rawa Bangkai Lake and to evaluate the level of bioaccumulation and bioconcentration of lead content in various fish in the waters of Rawa Bangkai Lake. This research provides output in the form of heavy metal lead bioconcentration data in various fish in Rawa Bangkai waters as information and an early warning system for fisheries utilization, especially consumption fish in food safety. The results of the study indicated that 77% of fish samples from various types and locations did not meet the SNI (Indonesian National Standard) quality standards for fresh fish and the European Union (EU) standards related to lead content. It was only 7% that fulfilled SNI, but it did not meet the European Union standards. Meanwhile, 16% met SNI and European Union Standards. This matter shows that the fish in the waters of Rawa Bangkai is not safe to consume. It is necessary to immediately implement an integrated and comprehensive management of Rawa Bangkai area to make the waters remain clean and healthy.