



Effect of Degumming on the Characteristics of Fish Oil from By-Product of Sardine and Tuna Canning and Meal Processing

Teti Estiasih^{1*}, Kgs. Ahmadi², Feri Ardi Kurniawan¹, Jaya Mahar Maligan¹

¹ Department of Food Science and Technology, Faculty of Agricultural Technology, Brawijaya University, Jl. Veteran, Malang, Indonesia 65145

² Department of Agroindustrial Technology, Faculty of Agriculture, Tribhuwana Tungadewi University, Jl. Tlogo Warna, Tlogomas, Malang, Indonesia 65144

Abstract: Fish oil from by-products of tuna and sardine canning and meal processing is rich in ω -3 fatty acids. Refining is required to process this by-product into edible fish oil. One step in crude fish oil refining is degumming to remove phosphatidic compounds. Water degumming with phosphoric acid is one simple degumming method. This study was aimed to evaluate the changes of fish oil characteristics from by-products of tuna and sardine canning and meal processing after degumming. The results showed that degumming decreased phosphorus content in all fish oils. Degree of phosphorus removal depended on fish oil type. Degumming did not change free fatty acid content of fish oil, although a slight decrease was found in fish oil from tuna canning processing. Degumming decreased peroxide value of all type of fish oil, meanwhile anisidine value tended to increase with the high increase was found in sardine oil. Oxidation level of fish oil generally increased after degumming. In conclusion, water degumming is suitable to use for removal phosphatidic compounds of fish oil from by-products of canning and meal processing. The changes of fish oil characteristics after degumming is affected by type of fish oils.

Keywords: by-product, degumming, fish oil, sardine, tuna.