



## Intisari

Tulang ikan merupakan salah satu limbah yang dihasilkan dari industri pengolahan ikan yang memiliki kandungan kalsium terbanyak dalam tubuh ikan dan berpotensi ekonomi untuk diolah menjadi tepung tulang ikan sebagai bahan pengkaya pangan dan pakan. Tujuan penelitian adalah mengkaji pengaruh metode hidrolisis terhadap sifat fisikokimia dan sensori tepung tulang ikan lele, tuna dan lemadang. Faktor yang dicobakan sebagai sumber perlakuan adalah metode hidrolisis serta jenis tulang ikan. Parameter yang diuji yaitu: fisik (rendemen, kehalusan, densitas kamba, derajat putih, pH); kimia (kalsium, fosfor, kadar air, abu, protein, lemak) serta sensori (parameter kenampakan, tekstur, aroma) menggunakan metode rangking, deskriptif dan QDA. Tepung tulang yang dihasilkan memiliki rendemen 32,01–61,97%; kehalusan 80,17–96,43%; densitas kamba 0,11–0,12g/ml; derajat putih 22,9–83,37; pH 7,14–7,38; kadar kalsium 7,78–24,08%; fosfor 7,07–18,36%; air 6,22–8,33%; abu 57,37–62,38%; protein 10,64–32,15% dan lemak 0,19–10,05%. Berdasarkan hasil analisis statistik, diketahui bahwa faktor A (perlakuan jenis tulang ikan) berpengaruh nyata terhadap rendemen, kehalusan, derajat putih, kadar kalsium, fosfor, air, protein, lemak, kenampakan, tekstur, dan aroma, faktor B (metode hidrolisis) berpengaruh nyata terhadap semua parameter, serta interaksi kedua perlakuan berpengaruh nyata terhadap parameter rendemen, kehalusan, derajat putih, kadar kalsium, fosfor, air, protein, kenampakan, tekstur, dan aroma. Dari hasil analisis laboratorium diketahui bahwa: tepung tulang hasil hidrolisis NaOH memiliki kehalusan, derajat putih, kadar kalsium, fosfor dan abu yang lebih tinggi daripada tepung tulang tanpa hidrolisis ( $p < 0,05$ ). Tepung tulang hasil hidrolisis NaOH mendapatkan respon "baik" oleh panelis pada uji rangking dan pada uji QDA menunjukkan "sedikit aroma amis".

Kata kunci : fisikokimia, hidrolisis, kalsium, sensori, tepung tulang ikan



### *Abstract*

Fish bone is one of many waste produce from fish processing which contains the most of calcium in fish and has the potential for economic value to be transfer into bone meal as food add-on and other purposes. The main purpose of this research is to reviewing the effects of hydrolysis method for its physico-chemistry and sensory characteristic from catfish, tuna, and lemadang bone meal. The factor used as source of treatment are the hydrolysis method and type of fish. The test parameter includes are physics (yield capability, softness, kamba density, whiteness, pH) chemistry (calcium, phosphorous, water, proteins, ash, lipid and fat) and also sensory (appearance, texture, and smell) measure by rank, description, and QDA test. Bone meal produced had a yield of 32,01–61,97%; fineness of 80,17–96,43%; kamba density of 0,11–0,12 g/ml; white degrees of 22,9–83,37; pH 7,14–7,38; calcium levels 7,78–24,08%; phosphorus 7,07–18,36%; water 6,22–8,33%; ash 57,37 –62,38%; protein 10,64–32,15%, fat 0,19–10,05%. According to statistic analysis, factor A (type of fish) has an effect to some of the test parameter such as yield content, fineness, whiteness, levels of calcium, phosphorus, water, protein, fat, appearance, texture, and smell, while factor B has effect in every test parameters, also there are effects on interaction in some of the test parameter such as yield, softness, whiteness, levels of calcium, phosphorus, water, proteins, appearance, texture, and smell. Laboratory analysis indicates that the bone meal made using the hydrolysis method using NaOH has better result in softness, whiteness, level of calcium, phosphorous and ash than the non hydrolysis ( $p < 0,05$ ). The hydrolysis bone meal has better responds from panelist rather than the non hydrolysis.

Key words : calcium, fishbone meal, hydrolysis, physical and chemical, sensory