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KEMUNDURAN MUTU IKAN LELE DUMBO (*Clarias gariepinus*) PADA PENYIMPANAN SUHU *CHILLING* DENGAN PERLAKUAN CARA MATI

Quality Changes of Dumbo Catfish (Clarias gariepinus) by Killing Techniques During Chilling Temperature Storage

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Abstract

The time of prerigor, rigor mortis, initial postrigor, and the end postrigor phase of catfish killed instantly in 0, 9, 57, and 144 hours was investigated. In addition, the time of prerigor, rigor mortis, initial postrigor, and the end of postrigor phase of catfish killed after 12 hours without water media were 0, 6, 42, and 120 hours. Freshness declination of catfish killed instantly slower than killed after 12 hours without water media. Fish killed instantly had $5.1x10^5$ colonies/g TPC (*Total Plate Count*) value and 24.36 mg N/100 TVB (Total Volatile Base) value. The sensory value for eyes, gills, mucus of body surface, meats, odor, and texture at the end of storage (the sixth day) was 3.95, 4.05, 4.30, 4.45, 4.45 and 3.45 respectively. On the other hand the fish killed after 12 hours without water media had 1,2x106 colonies /g, TPC value and 25,2 mg N/100 g TVB value. The sensory value for eyes, gills, mucus of body surface, meats, odor, and texture at the end of storage (the sixth day) was 2.3, 2.2, 2.8, 3.9, 3.7 and 2.85, respectively.

Keywords: catfish, fish quality, low temperature

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MODIFIKASI TEKNOLOGI PENGOLAHAN SURIMI DALAM PEMANFAATAN "*BY-CATCH*" PUKAT UDANG DI LAUT ARAFURA

Modification Technology of Surimi Processing through Utilization "By-Catch" of Shrimp Net in Arafura Sea

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Abstract

Utilization of shrimp net in Arafura Sea produced by–catch with average ratio 1:12 between main capture and by–catch. The low economic value, unavailability of suitable processing technology, and constraint in management by–catch lead to discharge the majority of by-catch to the sea. The aims of this research were to analyze the availibility of raw material of surimi from by–catch of shrimp net in Arafura Sea and modified processing technology from mixture of fish species by prepared minced fish in vessel and surimi processing of mixture fish species in land and followed by quality assessment of surimi. Result of the research showed that number of 502 vessels operated – mostly by–catch – per vessel unit per year was 795 metric ton, therefore the estimation of volume of by–catch per year in Arafura was 399,000 metric ton. Fish species of by-catch that suitable processed into surimi was 32% or 128 metric ton/year or equivalent to 41,000 metric ton of surimi per year. Result of cut off technology analysis showed that frozen minced fish could be stored for 5 weeks at –18^{o}C which constantly produced good surimi (folding test: A, teeth cutting test:7 and gel strength > 500 g/cm^2). Producing "minced fish" in fishing vessels would decrease weight to 60% and volume fourfold compose to whole fish without decreasing the quality of surimi produced.

Keywords : by–catch, minced fish, non economic fish, surimi, quality of surimi.

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NILAI PARAMETER BIOKINETIKA PROSES DENITRIFIKASI LIMBAH CAIR INDUSTRI PERIKANAN PADA RASIO COD/TKN YANG BERBEDA

Biokinetic Parameter Values of Denitrification Process of Fishery Industrial Wastewater on Differentiated COD/TKN Ratios

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Abstract

Indonesian Fishery Industries has been developed very rapidly. This can cause negative effect such as increase in wastewater that involved highly organic substrates that will danger the environment. This effluent must be treated before flowed it to environment and usually treated by biological wastewater treatment through nitrification and denitrification process simultaneously using activated sludge. This study conducted denitrification process using activated sludge with treatment using different COD/TKN ratios which are 2.44, 2.96, and 3.26 and monitored in *Hydraulic Retention Time* (HRT) 4.5, 3.5, 2.5, 2.0, 1.5, 1.0, 0.75, 0.5 and 0.25 day. Result showed that for determining the biokinetic parameters such as K_s, K_{no} (Monod Constant saturated), Y (yield), k_d (endogenous decay) also μ_m result for range of COD/TKN ratios 2.44–3.26 are 3.04 are 14.93–17.26 mg/lCOD, 1.21-1.60 mg/l NO_3, 0.171-0.193 mg VSS/mg COD, 0.014-0.062 day^{-1} and 1.64–0.97 day^{-1}. These biokinetic parameters can be used to improve the wastewater treatment plant.

Keywords: activated sludge, biokinetic parameter, denitrification

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KARAKTERISTIK BAKSO IKAN DARI CAMPURAN SURIMI IKAN LAYANG (*Decapterus spp*.) DAN IKAN KAKAP MERAH (*Lutjanus sp.*) PADA PENYIMPANAN SUHU DINGIN

Characteristic of fishball from mixed-surimi of Decapterus spp. and Lutjanus sp. on chilling storage

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Abstract

The utilization of scad (*Decapterus spp*.) has not been done optimally. This species is a potential fish to be processed into surimi that is a raw material of fish jelly products, such as fishball. It contains red meat in greater proportion compared to white meat. For this reason, surimi of scad (*Decapterus spp*.) was produced using alkaline leaching method and mixed with red snapper (*Lutjanus* sp) surimi to be used a raw material of fishball. The fishball was added by chitosan at concentration of 0.1% as preservative, while carrageenan was added at concentration of 1% as gelling agent. The fishball was stored in chilling condition (0-4 ^{o}C). The results indicated that surimi of *Decapterus spp.* being leached twice showed the same quality as white meat surimi. Fishball containing red snapper surimi and scad surimi of 1:3 added by 25% of tapioca starch showed good physical and sensory characteristics. The mixed surimi of fresh fish meat was better in term of its physical, chemical, and sensory characteristics compared to the frozen one. Chitosan added at 0.1% could preserve the fishball for two weeks on chilling storage (0-4 ^{o}C) without causing any change of its physical and chemical characteristics. The fishball produced has a better flavor and texture was similar to commercial one.

Keywords: chilling storage, *Decapterus* spp, fishball, *Lutjanus* sp, mixed-surimi.

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PEMANFAATAN CANGKANG RAJUNGAN (*Portunus pelagicus*) SEBAGAI SUMBER KALSIUM DAN FOSFOR DALAM PEMBUATAN PRODUK *CRACKERS*

Utilization of Crabs Shell (Portunus pelagicus) as Sources of Calcium and Phosphorus in Making of Crackers Product

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Abstract

Crabs shell is main waste product from pasteurization or canning industry of crabs. It contains high minerals content especially Ca and P. The objectives of this experiment were to produce crabs shell powder through two methods i.e. dry and wet methods and to evaluate their physicochemical characteristics include solubility of Ca and P. Production methods of crabs shell powder did not significantly affected the physicochemical properties; however, wet method produced slightly higher solubility of Ca and P than dry method. Crabs shell powder addition in different concentrations (0, 0.75, 1.50, 2.25, and 3.00%) into crackers product did not affect significantly sensory parameters through scoring test, therefore the smallest and the highest concentration of crabs shell powder addition, namely formulas A and D, were chosen to be tested for their physicochemical properties. Formula D crackers obtained high number of Ca and P and significantly different from other formulas include commercial product, however formula A crackers had the highest solubility of Ca and P with values were 42.12% and 57.08% respectively.

Keyword: calcium crackers, phosphorus, solubility, shell powder, crabs

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PENGARUH KONSENTRASI GARAM PADA PEDA IKAN KEMBUNG (*Rastrelliger sp*.) DENGAN FERMENTASI SPONTAN

The Influence of Salt Concentration on Peda Chub Mackerel (Rastrelliger Sp.)With Spontaneous Fermentation

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Abstract

Peda is one of fermented fish product without further drying process, so it still classified as an intermediate moisture food where the fermentation process is still exist. The objective of research was to know the influence of salt concentration on peda spontaneous fermentation process. The treatment was immersion on salt concentrations (30%, 40% and 50%) with two salting phase. Parameters which observed were pH, water activity (a_w), total viable count (TVC), lactic acid bacteria count (LAB) and salt content during 0, 6, and 14 days of fermentation. The changes of raw material and its chemical composition were also analyzed include moisture, ash, protein and lipid, while total volatile basic (TVB) and trimethylamine (TMA) were observed at the end product a long with the sensory test. During the fermentation process, the value of pH, a_w, salt content and log TVC decreased, while the BAL total log increased. The proximate analyses showed that the moisture and protein on raw material were 73.91% and 22.01% respectively which higher with the product 52.71-53.94% for moisture and 20.15-21.54% for protein, while ash and lipid raw material were 3,22% and 0,22% respectively which lower from its product 1.25-1.37% for ash dan 15.96-16.90% for lipid. The content of TVB (18.42-16.78mg/ 100 gr) and TMA (3.35-2.23 mg/ 100 gr) of peda were decrease while increasing the salt content (30-50%). The sensory test indicated no significant different result in between all treatments. Therefore, the determination of selected product was based on the result of sensory test eg. 30% salt.

Keywords: chub mackerel, fermenstation, peda, *Rastrelliger* sp