

JURNAL PENGOLAHAN HASIL PERIKANAN INDONESIA

(Dahulu Bernama Buletin Teknologi Hasil Perikanan)

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**KEMUNDURAN MUTU IKAN NILA (*Oreochromis niloticus*) PADA
PENYIMPANAN SUHU RENDAH DENGAN PERLAKUAN
CARA KEMATIAN DAN PENYIANGAN**

*Quality Changes of Tilapia Fish (*O. niloticus*) by Killing Techniques and Gutting
during Low Storage Temperature*

Aris Munandar^{1*}, Nurjanah², Mala Nurilmala²

¹Departemen Perikanan Universitas Sultan Ageng Tirtayasa

²Departemen Teknologi Hasil Perairan Institut Pertanian Bogor

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Abstract

Killing and gutting treatment at low storage temperature (0-5 °C) on tilapia fish (*O. niloticus*) showed significant results on the subjective test (organoleptic) and objectives (TPC/Total Plate Count, pH, and TVB/Total Volatile Base). The A1B2 treatment (dead pricker, gutting) gave the best quality, and this could be maintained for 10 days. Tilapia fish could be consumed up to 10 days because the number of bacteria at the end of the storage period reached 9.7×10^5 colonies/g. TVB value generated at the end of the storage period reached 20.45 mg N/g with some fluctuation of pH value during the storage. The quality of tilapia fish could be maintained with the combination of treatment and storage at low temperature (0-5 °C).

Keywords: chilling, fish quality, tilapia

**ANALISIS FINANSIAL PENGOLAHAN SURIMI DENGAN SKALA MODERN
DAN SEMI MODERN**

Financial Analysis of Surimi Processing by Modern and Semi-Modern Scale

Nazori Djazuli^{1*}, Mita Wahyuni², Daniel Monintja², Ari Purbayanto²

¹*Departemen Kelautan dan Perikanan, Jakarta*

²*Fakultas Perikanan dan Ilmu Kelautan, Institut Pertanian Bogor*

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Abstract

Development of surimi processing in the industry regions which have huge potential of raw material, can be done through aiming at the business feasibility existed either by modern surimi processing business as well as semi modern. In general, the aim of this research is to analyze the feasibility business of surimi processing either by modern surimi processing business or semi modern. Sampling of surimi processing business for modern surimi processing was located in Pekalongan, Central Java Province and semi modern surimi processing was located in Pulau Moro, Riau Island Province. Data collection was done by questionnaire and interview to stakeholders of surimi processing industry. Method of analysis was carried out by using criteria of financial feasibility i.e. Payback Period (PB), Net Present Value (NPV), Internal Rate of Return (IRR), Profitable Index (PI), Net B/C, and Break Event Point (BEP). Result of research showed that surimi processing business either by modern surimi processing business or semi modern is feasible shown from (1) Value of NPV for PT. A is Rp.22,647,400,670 and PT.B is Rp.29,866,797,485 for 10 years, (2) Value of IRR at surimi business in PT.A is 49.28% and PT.B is 56.11%, (3) PT. A needs 2 years 1 month and 6 days to return the investment that has been invested in surimi processing, meanwhile PT.B needs 1 year 10 months and 6 days, (4) Value of profitability index PT.A is 2.43 and PT.B is 2.78, and (5) figure of Net B/C Ratio PT.A is 1.89, and PT.B has figure of Net B/C Ratio 1.58.

Keywords : financial feasibility, surimi product

KARAKTERISASI DAN *RECOVERY* PROTEIN DARI AIR CUCIAN *MINCED FISH* DENGAN MEMBRAN *REVERSE OSMOSIS*

Characterization and Recovery of Minced fish Wastewater Protein using Reverse Osmosis

Uju*, Tati Nurhayati, Bustami Ibrahim, Wini Trilaksani dan Maglory Siburian

*Departemen Teknologi Hasil Perairan
Fakultas Perikanan dan Ilmu Kelautan, Institut Pertanian Bogor*

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Abstract

Recovery of minced fish wastewater soluble protein was done by reverse osmosis membrane. The mincefish wastewater has high level polluting load. It contains COD and TSS 4.233 and 55,06 mg/l respectively, but it is potential to utilized because of high protein and amino acids content especially glutamic acid. Fluxes of permeate during recovery process were kept on steady state in the beginning process at 15 l/m²h without prefiltration and 20 l/m²h with 0,9 micron prefiltration. During concentration, flux time decreased from 22,11 l/m²h at concentration factor 1 to 12,95 l/m²h at concentration factor 1,52. In other sides the rejection value of protein increased from 90,11% in the beginning process to 99,50% in the end of the concentration process. At the end of the recovery stage, yield concentrate contained 0.401 g/l which is 21 fold greater than the original step. Therefore permeate stream delivered high quality effluent and met the standard of wastewater effluent.

Keywords: minced fish, protein, recovery, reverse osmosis

APLIKASI KARAGINAN DALAM PEMBUATAN SKIN LOTION

Application Of Carrageenan In Making of Skin Lotion

Anna Carolina Erungan*, Sri Purwaningsih, Syeni Budi Anita

*Departemen Teknologi Hasil Perairan
Fakultas Perikanan dan Ilmu Kelautan Institut Pertanian Bogor*

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Abstract

The objective of the study is to utilize carrageenan into skin lotion making as a thickener, stabiliser, emulsifier and humectan. The concentration of carrageenan that used were 0%, 1%, 2%, and 3%. Parameter observed were sensory characteristic, chemical characteristic, and physic. Skin lotion made from the best carrageenan concentration stored for 30 days in room temperature, and then compared with other skin lotion added with and without setyl alcohol, and also skin lotion without carrageenan. Parameter observed were skin humidity, sensory characteristic, physical and chemical characteristic, and also total microbial after 3 months storage. The results showed that skin lotion with 2% carrageenan has the best quality with parameter sensory of panel preferences was from quite likely until most likely, pH 7,5; viscosity 5675 cP, and emulsion stability was 100%, skin humidity value has the highest percentage and showed the lowest decrease of skin humidity compare with product with and without setyl alcohol, and product without carrageenan. Panel preferences decreased during 30 days storage even physical and chemical characteristic were in still good condition, pH product tend to be constant, where viscosity increased. After 3 months storage, total microbial was $1,0 \times 10^1$ cfu per gram, while the product added with setyl alcohol has no microbial colony. Poduct without setyl alcohol and without carrageenan has $2,0 \times 10^1$ cfu per gram. The product is safe to use, where total microbial was below standard of SNI 16-4399-1996 that is $1,0 \times 10^2$ cfu per gram.

Keywords: Skin lotion, carrageenan, setyl alcohol, skin humidity, emulsion stability.

**KARAKTERISTIK EKSTRAK BAKTERI BERASOSIASI DENGAN
EUCHEUMA COTTONII DOTY YANG MEMILIKI AKTIVITAS
ANTIMIKROBA**

*Characteristics of Antimicrobial Activity of Eucheuma cottonii Doty-Associated
Bacteria Extracts*

Risa Nofiani*¹, Kadarisno¹, Daryati², Ajuk Sapar¹

¹*Jurusan Kimia, FMIPA Universitas Tanjungpura*

²*Laboratorium Kesehatan Provinsi Kalimantan Barat*

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Abstract

Marine organisms-associated bacteria have a potential source of antimicrobial compounds. The aim of the research was to find out characteristics of antimicrobial activity of *E. cottonii* Doty-associated bacteria extracts and their genus from Lemukutan Island, Kalimantan Barat. Five of 11 isolates showed antimicrobial activity namely *Flavobacterium* sp. K08, *Alteromonas* sp. K09, *Bacillus* sp. K10, *Klebsiella* sp. K11, and *Pseudomonas* sp. K12. Furthermore, their secondary metabolites were extracted with methanol. The characteristic of the best bacteria extracts minimum inhibitory concentrations (MICs) for *Escherichia coli*, *Bacillus spaericus*, *Staphylococcus epidermidis*, and *Candida tropicalis* were obtained from bacteria extract of *Bacillus* sp. K10 (250 µg/disc), *Bacillus* sp. K10 (750 µg/disc), *Pseudomonas* sp. K12, (500 µg/disc), and *Alteromonas* sp. K09 (1,500 µg/disc) respectively.

Keywords: antimicrobial activity, *Alteromonas* sp., *E. cottonii* Doty, *Flavobacterium* sp., *Pseudomonas* sp.

**PEMANFAATAN KITOSAN PADA PENGOLAHAN LIMBAH CAIR INDUSTRI
PERIKANAN**

The Utilization of Chitosan on Fishery Industrial Wastewater Treatment

Bustami Ibrahim, Pipih Suptijah, Prantommy

*Departemen Teknologi Hasil Perairan
Fakultas Perikanan dan Ilmu Kelautan, Institut Pertanian Bogor*

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Abstract

Highly organic substances contained within fishery industrial wastewater will pollute the environment when it flows into public water body without any previous treatment. Chitosan is polymer substance extracted from shrimp shell which is able to wrap solid particles suspended in liquids and bring them together and agglomerate makes it suitable as a coagulant aid. The objective of this research was to study the effectiveness of chitosan in order to decrease pollutant parameter in the fishery industrial wastewater. The quality of chitosan used during this research confirmed to Protan Laboratory standard. Results showed that chitosan as a coagulant has good performance in pH range of 6.6-6.8 and at concentration of 175-225 ppm. Within these conditions, chitosan could decrease turbidity value 94.33%-95.17%, TSS (Total Suspended Solids) 95.10%-95.82%, BOD (Biochemical Oxygen Demand) 72.09%-79%, COD (Chemical Oxygen Demand) 76.72%-79.40%, TKN (Total Kjeldahl Nitrogen) 12.50%-27.82%, NH₃ 80.84%-82.56%, NO₂-N 47.69%-54.74%, NO₃-N 19.39%-40.14%. The best chitosan concentration to use was at 200 ppm. The quality of effluent produced confirmed to Standard Regulation Indonesian Ministry of Environmental for Standard of Industrial Wastewater no.:KEP-51/MENLH/10/1995.

Keywords: chitosan, coagulant, fishery industrial wastewater treatment