

DAFTAR PUSTAKA

- Afridiana N., 2011. *Recovery glukosamin hidroklorida dari cangkang udang melalui hidrolisis kimiawi sebagai bahan sediaan suplemen osteoarthritis*. Skripsi. Bogor: Institut Pertanian Bogor.
- Agustina, Sry, I Made Dira Swantara dan I Nyoman Suartha. 2015. Isolasi Kitin, Karakterisasi, Dan Sintesis Kitosan Dari Kulit Udang. *Jurnal Kimia*. 9(2).271-278.
- Astawan, Made, Aviana T. 2003. Pengaruh jenis larutan perendam serta metode pengeringan terhadap sifat fisik, kimia, dan fungsional gelatin dari kulit cucut. *Jurnal Teknologi dan Industri Pangan* 16(1): 7-13.
- Benavente, M., Arias, S., Moreno, L., and Martínez, J. 2015. Production of Glucosamine Hydrochloride from Crustacean Shell. *Journal of Pharmacy and Pharmacology*. 3: 20-26
- Bohlman, J.A.; Schisler, D.O.; Hwang, K.O.; Hennling, J.P.; Trinkle, J.R.; Anderson, T.B.; Steinke, J.D.; Vanderhoff, A. 2004. *N-Acetyl-D-glucosamine and Process for Producing N-Acetyl-Dglucosamine*. US Patent NO. 6693188B2,
- Budiutami A., Nurhua Kumala S. dan Slamet Priyanto. 2012. Optimasi Proses Ekstraksi Kitin menjadi Kitosan dari Limbah Kulit Ulat Hongkong (*Tenebrio molitor*). *Jurnal Teknologi Kimia dan Industri (JTKI)*.1(1)
- Chang, Ke LB, Tai MC, Cheng H. 2001. Kinetics and products of the degradation of chitosan by hydrogen peroxide. *Journal of Agricultural Food Chemistry* 49: 4845.
- Chasanah, F., 2016. *Optimasi Produksi Glukosamin Hidroklorida dari Karapas Udang dengan Kombinasi Konsentrasi Hcl dan Waktu Pemanasan*. Skripsi. Surabaya: Universitas Airlangga.
- Chen J.K., Chia-Rui Shen, dan Chao-Lin Liu. 2010. Review N-Acetylglucosamine: Production and Applications. *Journal Marine Drugs*. 8, 2493-2516

- Chen W, Chiou RYY. 2004. A modified chemical procedure for rapid determination of glucosamine and its application for estimation of mold growth in peanut kernels and koji. *Journal of Agricultural and Chemistry* 47: 1999-2004.
- Creamer, P. 2000. Osteoarthritis Pain and Its Treatment. *Curr. Opin. Rheumatology*. 12, 450–455.
- Dachriyanus. 2004. *Analisis Struktur Senyawa Organik Secara Spektroskopi*. Padang: LPTIK Universitas Andalas.
- EFSA [European Food Safety Authority]. 2009. Scientific Opinion on the Substantiation of a Health Claim Related to Glucosamine Hydrochloride and Reduced Rate of Cartilage Degeneration and Reduced Risk of Development of Osteoarthritis Pursuant. *European Food Safety Authority*. VOL 7(10): 1358.
- Erika I. Rojas D, Waldo M, Arguelles M, Inocencio HC, Javier H, Jaime LM, Francisco MG. 2005. Determination of chitin and protein contents during the isolation of chitin from shrimp waste. *Macromolecular Bioscience*. 6: 340–347.
- Ernawati. 2012. *Pembuatan Glukosamin Hidroklorida (GlcN HCl) dengan Metode Autoklaf*. Skripsi. Fakultas Perikanan dan Ilmu Kelautan. Institut Pertanian Bogor.
- Fereidoon Shahidi dan Priyatharini Ambigaipalan. 2019. Bioactives From Seafood Processing By-Products. *Encyclopedia of Food Chemistry*. 280-288.
- Food and Agriculture Organization. 2019. Species Fact Sheets Portunus pelagicus (Linnaeus,1758).December 11, 2019.<http://www.fao.org/fishery/species/2629/en>
- Gandhi, Neena, Laidler JK. 2002. Preparation of Glucosamine Hydrochloride. *United States Patent*: US 6,486,307 B1.
- Ghofari, M. A., Ali Ridlo, dan Rini Pramesti. 2020. Isolasi Glukosamin dari Limbah Cangkang Rajungan Portunus pelagicus (Linnaeus,1758) (Malacostraca: Portunidae) dengan Hidrolisis Asam Klorida. *Journal of Marine Research* Vol 9, No.2, pp. 151-158

- Hardoko, H., Sasmito, B. B., Puspitasari, Y. E., Afandi, H. M., & Maulia, N. (2017). Study of Glucosamine Production from Shrimp Shells by Fermentation Using *Trichoderma harzianum*. *The Journal of Experimental Life Sciences*, 7(2), 115–121.
- Hathcock ,J.N and Andrew Shao. 2007.Risk assessment for glucosamine and chondroitin sulfate. *Regulatory Toxicology and Pharmacology*. 47(1):78-83
- Hidayat, M. Nur. 2016. Respon Biologis Broiler terhadap Pemberian berbagai Level Tepung Cangkang Kepiting. *Jurnal Ilmu dan Industri Peternakan*. 3(1): 17 - 23.
- Holanda HD, Netto FM. 2006. Recovery of component from shrimp (*Xiphopenaeus kroyeri*) processing waste by enzymatic hydrolysis. *Journal of Food Science* 71:298.
- Huskisson EC. 2008. Glucosamine and chondroitin for osteoarthritis. *The Journal of International Medical Research* 36 (6): 1-19.
- Institute of Medicine and National Research Council. 2004. *Prototype monograph on glucosamine. In Dietary Supplements: a framework for evaluating safety*. C-1-C86
- Juwana, S. dan K. Romimohtarto. 2000. *Rajungan – Perikanan, Cara Budidaya dan Menu Masakan*. Jakarta: Djambatan.
- Kementerian Kelautan dan Perikanan. 2018. *Produktivitas Perikanan Indonesia pada: Forum Merdeka Barat 9 Kementerian Komunikasi dan Informatika*. Jakarta: Kementerian Kelautan dan Perikanan RI.
- Kraisangsri, J. dkk., 2018. Physicochemical Characteristics of Glucosamine from Blue Swimming Crab (*Portunus pelagicus*) Shell Prepared by Acid Hydrolysis. *Walailak J Sci & Tech* 15(12): 869-877.
- Kralovec JA, Barrow JC. 2008. *Marine Neutraceuticals and Functional Foods*. London. New York: CRC Press.
- Kumar, M.N.V.R.,(2000). A Review of Chitin and Chitosan Application. *Reactive & Functional Polymers*, 46, 1–27, 2000.

- Kumirska J, Weinhold MX, Sauvageau JCM, Th'oming J, Kaczynski Z, Stepnowski P. 2008. Determination of the pattern of acetylation of lowmolecular-weight chitosan used in biomedical applications. *Pharmaceutical Biomedical Analysis*. 50:587-590.
- Kurita K. 2006. Chitin and chitosan: functional biopolymers from marine crustaceans. *Macromolecular Biotechnology* 8(3): 203–226.
- Liu L, Liu Y, Shin HD, Chen R, Li J, Du G, Chen J. 2013. Microbial production of Glucosamine and N-acetylglucosamine: advances and perspectives. *Application Microbiology Biotechnology* 97:6149–6158.
- Marcum, F.D.; Seanor, J.W. 2007. *Composition and Method for Treating Rheumatoid Arthritis*. US Patent NO. 2008003258,
- Marganov, 2003. *Potensi Limbah Udang sebagai Penyerap Logam Berat (Timbal, Kadmium dan Tembaga) di Perairan*. Makalah Pribadi Pengantar ke Falsafah Sains (PP702) Program Pasca Sarjana Institut Teknologi Bandung.
- Martati, E., Susanto, T., Yunianta, & Ulifah, I. A. 2002. Isolasi Khitin dari Cangkang Rajungan (*Portunus pelagicus*). Kajian Suhu dan Waktu Proses Deproteinasi. *Jurusan Teknik Hasil Pertanian Fakultas Teknologi Pertanian*, Universitas Brawijaya. Malang.
- Matheis F. J. D. P. Tanasale, Amos Killay, dan Marsela S. Laratmase, 2011, Kitosan dari Limbah Kulit Kepiting Rajungan (*Portunus sanginolentus* L.) sebagai Adsorben Zat Warna Biru Metilena. *Jurnal Natur Indonesia*, 14 (2) : 165-171.
- Miller K.L, Clegg D.O., 2011. Glucosamine and Chondroitin Sulfate. *Rheum Dis Clin North Am*. 37:103-108
- Mohammed, Mohsin & Shukur, Kameran & Haj, Nadia. 2017. Preparation and Bioactivity Assessment of Chitosan-1-Acetic Acid-5-Flourouracil Conjugates as Cancer Prodrugs. *Molecules*. 22. 1629. 10.3390/molecules22111629.
- Mohammed, M. H., Williams, P. A., and Tverezovskaya, O. 2013. Extraction of Chitin from Prawn Shells and Conversion to Low Molecular Mass Chitosan. *Food Hydrocolloids*. 31:167

- Mojarrad JS, Nemati M, Valizadeh H, Ansarin M, Bourbour S. 2007. Preparation of Glucosamine from Exoskeleton of Shrimp and Predicting Production Yield by Response Surface Methodology. *Pharmacognosy and Food Science, and Pharmaceutics.* 1(1):1-5
- Mori, T.; Ichikawa, W.; Kita, Y.; Tetsuka, Y. 2010. *Method for Fermentative Production of N-AcetylD-glucosamine by Microorganism.* US Patent NO. 20100055746.
- Multazam. 2002. *Prospek Pemanfaatan Cangkang rajungan (Portunus sp.) sebagai Suplemen Pakan Ikan.* Skripsi. Bogor: Fakultas Perikanan dan Ilmu Kelautan, Institut Pertanian Bogor.
- Murhadi, Soewarno TS, Betty SL, Jennie, Anton Apriyantono, Sedarnawati Yasni. 2003. Isolasi dan identifikasi komponen volatil biji atung (*Parinarium glaberrium Hassk*). *Jurnal Teknologi dan Industri Pangan* 16(2):121-128.
- Myerson, A. S. 2001. *Handbook of Industrial Crystallization.* 2nd ed. United States America: Elsevier Sci. Technology., 53-54, 93-94.
- Nagaoka, I., Tsuruta, A., and Yoshimura, M. 2019. Chondroprotective Action of Glucosamine, A Chitosan Monomer, on The Joint Health of Athletes. *International Journal of Biological Macromolecules.* 132: 796, 799
- Nidheesh T, Kumar PG, Suresh PV. 2015. Enzymatic degradation of chitosan and production of D-glucosamine by solid substrate fermentation of exo- β -D-glucosaminidase (exochitinase) by *Penicillium decumbens* CFRNT 15. *International Biodeterioration & Biodegradation* 95 (1): 97-106.
- Nurjannah, A., YS Darmanto dan I Wijayanti. 2016. Optimasi Pembuatan Glukosamin Hidroklorida (GlcN HCl) Dari Limbah Cangkang Rajungan Melalui Hidrolisis Kimia. *Jurnal Pengolahan Hasil Perikanan Indonesia.* 19, 26-35.
- Pavia, D. L., Lampman, G. M., Kriz, G. S., and Vyvyan, J. R. 2009. *Introduction to Spectroscopy.* USA: Brooks/Cole, Cengage Learning. 25-87.
- Persiani, S., Roda, E., Rovati, L.C., Locatelli, M., Giacovelli, G., and Roda, A. 2005. Glucosamine oral bioavailability and plasma pharmacokinetics after

- increasing doses of crystalline glucosamine sulfate in man. *Osteoarthritis Cartilage.* 2005;13:1041-46.
- Pettersen H., Sannes A., Holme H. K., Kristensen Å. H., Dornish, M., and Smidsrød, O. 2000. Thermal Depolymerization of Chitosan Salts. *Advances in Chitin Science.* Edited by Peter, M. G., Domard, A., and Muzzarelli R. A. A., Vol. 4. Postdam: University of Potsdam. 422-8.
- Rasmussen RS, Morrissey MT. 2008. Chitin & Chitosan. In *Marine Nutraceutical and Functional Food.* Canada: CRC Press.
- Ryosuke, K.; Yoshiharu, M.; Kazuaki, K.; Kazuo, S. 2002. Production of Natural-type N-Acetyl-Dglucosamine. JP Patent NO. 200281696.
- Sashiwa, H.; Fujishima, S.; Yamano, N.; Kawasaki, N.; Nakayama, A.; Muraki, E.; Aiba, S. 2001. Production of N-Acetyl-D-glucosamine from β -Chitin by Enzymatic Hydrolysis. *Chem. Lett.* 31. 308-309.
- Sashiwa H., Fujishima S., Yamano N., Kawasaki Y., Nakayama A., Muraki E., Kazumi H., Oda K., Sei-ichi A. 2002. Production of N-acetyl-d-glucosamine from α -chitin by crude enzymes from *Aeromonas hydrophila* H-2330. *Carbohydrate Research.* 337(8):761-763
- Setoguchi T, Kato T, Yamamoto K, Kadokawa JI. 2012. Facile Production of chitin from crab shell using ionic liquid and citric acid. *International Journal of Biological Macromolecules* 50 (1): 861-864
- Shantosh S, Mathew PT. 2007. Preparation of glucosamine and carboxymethylchitin from shrimp shell. *Journal of Applied Polymer Science* 107: 280-285.
- Sharaf, E.F., A.E.Q. El-Sarrany, M. El-Deeb. 2012. Biorecycling of shrimp shell by *Trichoderma viride* for production of antifungal chitinase. *Af. J. Microbiol. Res.* 6 (21). 4538-4545.
- Sibi, G., Dhananjaya, K., Ravikumar, K. R., Mallesha, H., Venkatesha, R. T., Trivedi, D., Bhusal, K. P., Neeraj and Gowda, K. 2013. Preparation of Glucosamine Hydrochloride from Crustacean Shell Waste and It's Quantitation by RP-HPLC. *American-Eurasian Journal of Scientific Research.* 8(2): 63-67.

- Sinardi, Soewondo, P., dan Notodarmojo S. 2013. Pembuatan, Karakterisasi dan Aplikasi Kitosan dari Cangkang Kerang Hijau (*Mytilus virdis* Linneaus) Sebagai Koagulan Penjernih Air. *Konferensi Nasional Teknik Sipil 7 (KoNTekS 7)*: 34
- Sugijanto K., Astrid Kusuma P, dan Noor Erma N. 2019. Isolation of Glucosamine HCl from *Scylla paramamosain* and determination by HPLC. *Jurnal Teknologi*, 81, (5): 1-8
- Sukma, Sari, Sri Eva Lusiana, Masruri, Suratmo. 2014. Kitosan dari Rajungan Lokal *Portunus Pelagicus* Asal Probolinggo, Indonesia. *Kimia Student Journal*. 2(2). 506-512.
- Sularsih, Yuliati, A., dan Pramono D, C. 2012. Degrees of Chitosan Deacetylation from White Shrimp Shell Waste as Dental Biomaterials. *Dental Journal: Majalah Kedokteran Gigi*. 45(1): 17.
- Suptijah P. 2014. Tingkatan kualitas kitosan hasil modifikasi proses produksi. *Jurnal Teknologi Hasil Perairan* 7 (1): 56-67.
- Synowiecki, J., & Al-Khateeb, N. A. (2003). Production, Properties, and Some New Applications of Chitin and Its Derivatives. *Critical Reviews in Food Science and Nutrition*, 43(2), 145–171.
- Syukron, F., Rahman K., dan Bustari H. 2016. Karakteristik Glukosamin Hidroklorida (HCl GlcN) dari Kitin dan Kepiting Chitosan Biru Kolam (*Portunus pelagicus*). *Berkala Perikanan Terubuk* Vol. 44.(2):22–35
- Tamai, Y.; Miyatake, K.; Okamoto, Y.; Takamori, Y.; Sakamoto, K.; Minami, S. 2003. Enhanced Healing of Cartilaginous Injuries by N-Acetyl-D-glucosamine and Glucuronic Acid. *Carbohydrate Polymer*. 54, 251–262.
- U.S. Pharmacopeia. (2007). *The United States Pharmacopeia, USP 30/The National Formulary, NF 25*. Rockville: U.S. Pharmacopeial Convention
- Venugopal V. 2009. *Marine Products for Healthcare: Seafood Processing Wastes: Chitin, Chitosan, and Other Compounds*. New York: CRC Press.

- Widhyastuti, N. 2007. Produksi kitinase ekstraseluler *Aspergillus rugulosus* 501 secara optimal pada media cair. *Berita Biologi*. 8(6). 547-553.
- Yanuar, V. (2008). *Pemanfaatan Cangkang Rajungan (Portunus pelagicus) sebagai Sumber Kalsium dan Fosfor dalam Pembuatan Produk Crackers*. Sekolah Pascasarjana Institut Pertanian Bogor. Bogor.
- Younes, I and Marguerite Rinaudo. 2015. Chitin and Chitosan Preparation from Marine Sources. Structure, Properties and Applications. *Marine Drugs*. 13, 1133-117