

DAFTAR PUSTAKA

- Abderlmajeed, N. Oflat A., dan Enas N. 2012. Immobilization technology for enhancing bio-products industry. *African Journal of Biotechnology* 11 (71): 13528-13539.
- Afridiana, N. 2011. Recovery glukosamin hidroklorida dari cangkang udang melalui hidrolisis kimiawi sebagai bahan sediaan suplemen osteoarthritis Skripsi Institut Pertanian Bogor, Bogor.
- Agustina, S., Swantara, I. M. D., dan Suartha, I. N. 2015. Isolasi Kitin, Karakterisasi, dan Sintesis Kitosan dari Kulit Udang. *Jurnal Kimia* 9(2): 271-278.
- Aiba. 2009. Chemical and enzymatic modification of chitin and chitosan towards functional materials. Environmentally Degradable Polymer Research Group, Institute for Biological Resources and Functions-AIST.
- Amanto, B., Siswanti, Angga A. 2015. Kinetika pengeringan temu giring (*Curcuma heyneana Valeton & van Ziep*) menggunakan *cabinet dryer* dengan perlakuan pendahuluan blanching. *Jurnal Teknologi Hasil Pertanian* 8(2):107-114.
- Angelova, M., P. Sheremetska, dan M. Lekov. 1998. Enhanced polymethylgalacturonase production from *Aspergillus niger* 26 by calcium alginate immobilization. *Process Biochemistry* 33(3):288-305.
- Antonino, de Queiroz, Rayane S.C.M.; Lia Fook, Bianca R.P.; de Oliveira Lima, Vítor A.; de Farias Rached, Raíd Í.; Lima, Eunice P.N.; da Silva Lima, Rodrigo J.; Peniche Covas, Carlos A.; Lia Fook, Marcus V. 2017. Preparation and Characterization of Chitosan Obtained from Shells of Shrimp (*Litopenaeus vannamei* Boone). *Mar. Drugs* 15 (5): 141.
- Association of Official Analytical Chemist [AOAC]. 2005. Official Methods of Analysis of the Association of Official Analytical Chemist". Virginia USA: Association of Official Analytical Chemist Inc, Washington.
- Azuma, K. Tomohiro O., Saburo M., dan Yoshiharu O. 2015. Anticancer and anti-inflammatory properties of chitin and chitosan oligosaccharides. *J Funct Biomater* 6(1):33-49.
- Babu, K. dan Satyanarayana, T. 1996. Production of Bacterial Enzymes by Solid State Fermentation. *Journal of Scientific and Industrial Research*, 55: 464-467.
- Balakrishnan, K. dan Pandey, A. 1996. Production of Biologically Active Secondary Metabolites in Solid State Fermentation. *Journal of Scientific and Industrial Research*, 55: 365-372.

- Basmal J, Wikanta T, Tazwir. 2002. Pengaruh kombinasi perlakuan kalium hidroksida dan natrium karbonat dalam ekstraksi natrium alginat terhadap kualitas produk yang dihasilkan. *Jurnal Penelitian Perikanan Indonesia*. 8(6): 45-52.
- BPS. 2017. "Buletin PDB sektor pertanian". Kementerian Pertanian, Jakarta.
- Calcagno, A., J. Larrondo, M. Agut, dan M. A. Calvo. 1997. Chitinase Activity of Filamentous Fungi. *Mircrobios* 92.
- Cynthia, S. dan Shelley M. 2008. Enzyme Immobilization in Biotechnology. *Recent Patents Eng.* 2:195-200.
- Czechowska-Biskup, R., Jaronsiska, D., Rokita, B., Ulanski, P., dan Rosiak J. M. 2012. Determination of degree of deacetylation of chitosan-comparison of methods. *Progress on Chemistry and Application of Chitin and Its Derivatives* 17(1):5-20.
- Danial, E., Elnashar M., dan Awad G. 2010. Immobilized inulinase on grafted alginate beads prepared by the one-step and the two-steps methods. *Ind. Eng. Chem. Res.* 49:3120-27.
- Darmawan, R., Tri W., Mulyanto, dan E. Topan A. 2010. Studi Perbandingan Produksi Etanol Secara Kontinyu Menggunakan Z. mobilis Termutasi Teknik Immobilisasi Sel: Ca-alginat dan K-karaginan. Seminar Rekayasa Kimia dan Proses Universitas Diponegoro Semarang.
- Davies, Kim. 2007. "Buku Pintar Nyeri Tulang dan Otot". Erlangga, Jakarta.
- de Hoog, Guarro J., Gene J., Figueras M. 2000. *Zygomycota. Atlas of clinical fungi*, 58–124.
- Doumeche, B., J. Heinemann, W. Buchs, Hartmeier, M. B. Ansorge-Schumacher. 2002. *J. Mol. Catal B.* 18:19-27.
- Dompeipen, E. J. 2017. Isolasi dan identifikasi kitin dan kitosan dari kulit udang windu (*Penaeus monodon*) dengan spektroskopi inframerah. *Majalah BIAM* 13(1):31-41.
- Dompeipen, E., Marni K., Riardi P. 2016. Isolasi kitin dan kitosan dari limbah kulit udang. *Majalah BIAM* 12(1):32-38.
- Doriya, K., Jose, N., Gowda, M., dan Kumar, D. 2016. Solid-State Fermentation vs Submerged Fermentation for the Production of l-Asparaginase. *Advances in Food and Nutrition Research*, 115–135.
- Duarte, M., Ferreira, M., Marvão, M., Rocha, J. 2002. An optimized method to determine the degree of acetylation of chitin and chitosan by FTIR spectroscopy. *Int J Biol Macromol* 31:1-8.
- Economou, C. N., Makri, A., Aggelis, G., Pavlou, S., dan Vayenas, D. V. 2010. Semi-solid state fermentation of sweet sorghum for the biotechnological production of single cell oil. *Bioresource Technology*, 101(4):1385–1388.

- Einbu, A. 2007. Charactisation of chitin and study of its acid-cataysed hydrolysis. NTNU, Throndheim.
- Elnashar, M. 2010. Low-cost foods and drugs using immobilized enzymes on biopolymers. Book entitled Biopolymers.
- Farag, A. dan M. A. Hassan. 2004. Enzyme. Microb. Tech 34:85-93.
- Fernandez-Kim, S.-O. 2004. Physicochemical and functional properties of crawfish chitosan as affected by different processing protocols. Thesis in Department of Food Science, Seoul National University, Seoul.
- Fleming, Dara L. 2004. "Evaluating bacterial cell immobilization matrices for use in a biosensor". Virginia Polytechnic Institute and State University. Blacksburg: Virginia.
- Foucher, J.P., G.K. Westbrook, A. Boetius, S. Ceramicola, S. Dupre, J. Mascle, J. Mienert, O. Pfannkuche, C. Pierre, dan D. Praeg. 2009. Structure and Drivers of Cold Seep Ecosystems. Oceanography 22: 92-109.
- Ghufran, M. dan K. Kordi. 2010. "Budidaya Udang Laut". Penerbit Andi, Yogyakarta.
- Haedar N. H., Risco, B. G., Muh. Ruslan, U., dan Ambeng, 2014. Isolation and characterization of bacteria from waste sugar mill arasoe, kab. bone as raw material producing bioplastics degraded (Poly- β -Hidroksi Butirat). Jurnal Alam dan Ilmu Lingkungan 5(8).
- Hanafi, M., Syahrul A., Efrina D., dan B. Suwandi. 2000. Pemanfaatan kulit udang untuk pembuatan kitosan dan glukosamin. JKTI 10(1-2): 17-21.
- Hardoko, Bambang B. S., Yunita E. P., Hamid F. A., dan Nugroho A. 2017. Study of glucosamine production from shrimp shells by fermentation using *Trichoderma harzianum*" J.Exp. Life Sci. 7(2): 115-121.
- Hayati, M. 2002. Mempelajari pengaruh konsentrasi sel dan alginat pada imobilisasi *Arthrobacter* sp. NRRL B-3728 dengan metode penjerapan terhadap aktivitas glukosa isomeras". Skripsi, Institut Pertanian Bogor, Bogor.
- Herdyastuti, N., T. J. Raharjo, Mudasir, dan S. Matjeh. 2009. Chitinase and chitinolytic microorganism: isolation characterization and potential. Indonesian Journal of Chemistry 9(1):153-160.
- Hossain, M. S. dan Iqbal A. 2014. Production and characterization of chitosan from shrimp waste. J. Bangladesh Agril. Univ. 12(1): 153-160.
- Hussain, Z., A. Nazir, U. Shafique dan M. Salman. 2010. Comparative Study for The Determination of Metals In Milk Samples Using Flame -AAS And EDTA Complexometric Titration. Journal of Scientific Research 40:9-14.
- Insani, K. V. dan Nuniek H. 2016. Pengaruh konsentrasi enzim optimum pada pembentukkan N-asetilglukosamin. UNESA Journal of chemistry 5(3):60-63.

- Isbagio, H. 2009. "Struktur dan biokimia tulang rawan sendi. dalam Sudoyo AW, Setiyohadi B, Alwi I, Simadibrata M, Setiati S. Buku Ajar Ilmu Penyakit Dalam (Edisi Kelima)". Interna Publishing, Jakarta.
- Istianah, N. Agustin K., dan Feronika H. 2018. "Teknologi Bioproses". UB Press, Malang.
- John, E. 2009. Bradford for checking protein assay on mixed biological samples (techniques and instrumentation in analytical chemistry). Elsevier science 19(8):83-92.
- Jolanta, K., Małgorzata, M., Zbigniew, K., Anna B., Krzysztof, B., Jorg, T., dan Piotr, S. 2010. Application of spectroscopic methods for structural analysis of chitin and chitosan. Mar. Drugs 8:1567-1636.
- Kao, L. S. dan Charles E. G. 2008. Analysis of variance: is there a difference in means and what does it mean?. J Surg Res 144(1):18-170.
- Kar, S. Asish M., Pradeep K., Das M., Saptadip S., Bikash R., dan Keshab C. 2008. Production of xylanase by immobilized *Trichoderma reesei* SAF3 in calcium alginate beads. J Ind Microbiol Biotechnol 35(4):245-249.
- Kementerian Kelautan dan Perikanan Republik Indonesia. 2017. [online] <http://kkp.go.id/artikel/2233-maritim-indonesia-kemewahan-yang-luar-biasa> (diakses pada 16 Juli 2018).
- Kementerian Kelautan dan Perikanan Republik Indonesia. 2017. [online] https://satudata.kkp.go.id/dashboard_produksi (diakses pada 12 Desember 2018).
- Khan, T., Peh, K., dan Ching, H. 2002. Reporting degree of deacetylation of chitosan: the influence of analytical method.
- Khan, Z. Suhail A., Arnost B., Rachel C. 2009. *Mucor circinelloides* as a cause of invasive maxillofacial zygomycosis: an emerging dimorphic pathogen with reduced susceptibility to posaconazole. Journal of Clinical Microbiology 47(4):1244-1248.
- Kharistiananda, P. 2012. Imobilisasi *Candida rugosa* lipase dengan metode sol-gel menggunakan support kitosan sebagai biokatalis dalam sintesis wax ester. Skripsi, Departemen Teknik Kimia Universitas Indonesia, Depok.
- Khor, E. 2001. Fulfilling a biomaterials promise. Elsevier Limited, US.
- Komariah. 2013. Karakterisasi Kitin dan Kitosan yang Terkandung dalam Eksoskeleton Kutu Beras (*Sitophilus oryzae*). Seminar Nasional X Pendidikan Biologi FKIP UNS. Universitas Trisakti, Jakarta.
- Lee, S. C., Alicia L., Silvia C., dan Joseph H. 2013. Calcineurin plays key roles in the dimorphic transition and virulence of the human pathogenic zygomycete *Mucor circinelloides*. PLOS Pathogens 9:1-20.
- Lin, X. dan Joseph H. 2005. Chlamydospore formation during hyphal growth in *Cryptococcus neoformans*. Eukaryotic cell 4(10):1746-1754.

- Liu, T., Liu, Z., Song, C., Hu, Y., Han, Z., She, J., Fan, F., Wang, J., Jin, C., Chang, J. 2012. Chitin-induced Dimerization Activates a Plant Immune Receptor. *Science* 336:1160-1164.
- Machado, C.M., Oishi, B.O, Pandey, A. dan Soccol, C.R. 2004. Kinetics of *Gibberella fujikori* Growth and Gibberellic Acid Production by Solid State Fermentation in a Packed-Bed Column Bioreactor. *Biotechnology Progress*, 20: 1449-1453.
- Marganov. 2003. Potensi Limbah Udang Sebagai Penyerap Logam Berat Timbal Kadmium dan Tembaga di Perairan. Makalah Pribadi Pengantar ke Falsafah Sains Program S3 IPB.
- Maulana, S. Fadli A., dan Drastinawati. 2017. Kinetika reaksi demineralisasi isolasi kitin dari cangkang ebi. *JOM FTEKNIK* 4(2):1-5.
- Mayani, L. Sudarminto S., dan Dian W. 2014. Pengaruh pengecilan ukuran jahe dan rasio air terhadap sifat fisik kimia dan organoleptic pada pembuatan sari jahe (*Zingerber officinale*). *Jurnal Pangan dan Agroindustri* 2(4):148-158.
- McCabe, B. Kuek C., Gordon G., dan Phillips M. 2001, Immobilization of monocentric and polycentric types of anaerobic chytrid fungi in ca-alginate. *Enzyme Microb Technol* 29:144-149.
- McColl, G. 2004. Glukosamin untuk astеоatritis lutut. *Aust prescr.* 27:61-3.
- Mello, K., Bernusso, L., Pitombo, R., dan Polakiewicz, B. 2006. Synthesis and physicochemical characterization of chemically chitosan by succinic anhydride. *Brazilian archives of biology and technology.* 49(4):665-668.
- Moayednia, N. Ehsani M., Emamdjomeh Z., Asadi M., Mizani M., dan Mazaheri A. 2009. The effect of sodium alginate concentrations on viability of immobilized *Lactobacillus aciophilus* in fruit alginate coating during refrigerator storage. *Aust J Basic Appl Sci* 3:3213-3216.
- Morch, Y. A. 2008. Novel alginate microcapsules for cell therapy. NTNU-trykk, Norwegian.
- Morin-Sardin, S. Karin R., Louis C., Jean-Luc J., dan Emmanuel C. 2016. Effect of temperature, pH, and water activity on *Mucor spp.* growth in synthetic medium, cheese analog and cheese. *Food Microbiology* 56:69-79.
- Mujiman A. dan Suyanto R. 2005. "Budidaya Udang Windu". Penebar Swadaya, Jakarta.
- Nasichah, A.Z., Utami S., Endang S. Fatchur R. 2016. Identifikasi morfologi kapang endofit cengkeh afo dari ternate. *Proceeding biology education conference* 13(1):787-792.
- Ngoan, L. D., Lindberg, J. E., Ogle, B., dan Thomke, S. 2000. Anatomical Proportions and Chemical and Amino Acid Composition of Common Shrimp Species in Central Vietnam. *Asian-Australasian Journal of Animal Sciences* 13(10): 1422-1428.

- Nielsen, S. S. 2010. "Food Analysis", 4th ed. Springer Science+Business Media, New York, hlm. 578-582.
- Noble, J.E. dan Bailey J.A. 2009. Quantitation of protein. *Methods Enzymol.* 463:73-95.
- Nussinovitch, A.1994. Resemblance of immobilized *Trichoderma viride* fungal spores in an alginate matrix to a composite material. *Biotechnol. Prog.* 10:551-554.
- Orinda, Eny, Puspita I.D, Muhammad P.P, Ustadi, Iwan Y.B.L. 2012. Aktivitas Enzim Pendegradasi Kitin dari Isolat SD123 Asal Petis Serta Karakterisasi pH dan Suhu Aktivitas Enzim Hasil Purifikasi Parsial. *Jurnal Perikanan* 17(2):96-102.
- Orlowski, M., 1991. *Mucor* dimorphism. *Microbiol. Mol. Biol. Rev.* 55:234-258.
- Pantjita, H. 2006. "Metabolisme karbohidrat". Balai Penerbit Fakultas Kedokteran UI, Jakarta.
- Patil, S., S. Amena, A. Vikas, P. Rahul, K. Jagadeesh, dan K. Praveen. 2013. Utilization of silkworm litter and pupal waste-an eco-friendly approach for mass production of *Bacillus thuringiensis*. *Bioresour. Technol.* 131:545-547.
- Paul, T., Suman K., Arpan D., Kuntal G., Arpita M., Pijush P., Prasenjit B., Pradeep K., Bikas R., dan Keshab C. 2014. Production of chitin and bioactive materials from Black tiger shrimp (*Penaeus monodon*) shell waste by treatment of bacterial protease cocktail. *Biotech* 5:483-493.
- Percot, A., Viton C., Domard A. 2003. Optimization of chitin extraction from shrimp shells. *Biomacromolecules* 4(1):12-18.
- Poelongasih, C., Hernawan, Angwar M. 2008. Isolation and characterization of chitin and chitosan prepared under various processing times. *Journal of Indo. J. Chem* 8(2):189-192.
- Pratiwi, Rachmawati S., Tius E., Yaninda A., dan Aji S. 2015. Enzim Kitinase dan Aplikasi di Bidang Industri: Kajian Pustaka. *Jurnal Pangan dan Agroindustri* 3(3): 878-887.
- Prastiwi, R. 2014. Manfaat Kitin dan Kitosan Bagi Kehidupan Manusia. *Oseana* 39(1): 35-43.
- Puspawati, N., dan Simpen, I. 2010. Optimasi Deasetilasi Khitin dari Kulit Udang dan Cangkang Kepiting Limbah Restoran Seafood Menjadi Khitosan Melalui Variasi Konsentrasi NaOH. *Jurnal Kimia FMIPA Universitas Udayana*: 79-90.
- Rachmawati, S. P., Tius E. S., Yaninda A. K. W, dan Aji S. 2015. Chitinase and the application in industry: a review. *Jurnal Pangan dan Agroindustri* 3(3):878-887.

- Rahim, S., Alawi S., Fazlena H., Ku H., Miradatul N., Mohibbah M., dan Nurul A. 2013. Enzymes encapsulation within calcium alginate-clay beads: characterization and application for cassava slurry saccharification. *Procedia engineering* 68:411-417.
- Rahmansyah, M. dan Sudiana, I. 2003. Optimasi analisis amilase dan glukonase yang diekstrak dari miselium *pleurotus ostreatus* dengan asam 3,5 dinitrosalisilat. *Berk. Penel. Hayati* 9: 7-12.
- Raman S. dan Kumar R. 2011. Construction and nanomechanical properties of the exoskeleton of the barnacle, *Amphibalanus reticulatus*. *Journal of structural biology* 176(3):360-9.
- Ratnasri, P. dan Hemalatha, K. 2015. Studies of immobilized spores of *Aspergillus fumigatus*. *IJSRSET* 1(4):396-400.
- Reid DG, Mason MJ, Chan BK, dan Duer MJ. 2012. Characterization of the phosphatic mineral of the barnacle *Ibla cumingi* at atomic level by solid-state nuclear magnetic resonance: comparison with other phosphatic biominerals. *Journal of the Royal Society, Interface/the Royal Society* 9(72):1510-6.
- Rismawan. 2012. Rendemen glukosamin dari kitin udang. Skripsi, Institut Pertanian Bogor, Bogor.
- Robinson, T., Singh, D. dan Nigam, P. 2001. Solid-state fermentation: a promising microbial technology for secondary metabolite production. *Applied Microbiology and Biotechnology*, 55: 284-289.
- Rowe, R. Sheskey P., dan Owen S. 2009. "Handbook of pharmaceutical excipient 6th edition". Pharmaceutical Press and American Pharmacist Association, London.
- Salami, L. 1998. Pemilihan Metode Isolasi Kitin dan Ekstraksi Kitosan dari Limbah Kulit Udang Windu (*Peneaus monodon*) dan Aplikasinya sebagai Bahan Koagulasi Limbah Cair Industri Tekstil. Skripsi, Jurusan Kimia FMIPA UI, Depok.
- Saleh, M., Agustin T., Suptijah P., Heruwati E.. 1999. Pembuatan khitosan dari kulit udang windu (*Peneaus monodon*) dan uji koagulasi proteinnya. *JPPI* V (3):72-77.
- Sandai, D. Darah I. Jaim K. 2012. Calcium alginate entrapped cells of *Penicillium digitatum* FETL DS1 for the improvement of tannase production. *BTAIJ* 6(2):27-34.
- Sanusi, M. 2004. Transformasi kitin dari hasil isolasi limbah industri udang beku menjadi kitosan. *Mar. Chim Acta* 5(2):28-32.
- Saparianti, E. 2001. Amobilisasi sel *Pediococcus acidilactici* F11 penghasil bakterosin pada gel kalsium alginat. *Jurnal Teknologi Pertanian* 2(1):1-9.

- Sari, D., Hendi S., dan Abun. 2016. Pengaruh lama fermentasi oleh *Bacillus licheniformis* dilanjutkan oleh *Saccharomyces cerevisiae* pada limbah udang terhadap kandungan protein dan glukosa produk. Jurnal Universitas Padjajaran, Bandung.
- Sashiwa H., Fujishima S., Yamano N., Kawasaki N., Nakayama A., Muraki E., Hiraga K., Oda K., dan Aiba S. 2002. Production of Nacetyl-D-glucosamine from α -chitin by crude enzymes from *Aeromonas hydrophyla* H-2330. Carbohydrate Research 337:761-763.
- Setia, I. N. 2015. Chinolytic Assay and Identification of Bacteria Isolated from Shrimp Waste Based on 16S rDNA Sequences. Advances in Microbiology 5: 541-548.
- Sinambela, P. G. M. 2011. Ethanol dari Zymomonas mobilis A3 yang diimobilisasi pada k-Karaginan dalam Reaktor Kontinyu. Thesis, Program Magister Teknologi Proses Jurusan Teknik Kimia Fakultas Teknologi Industri ITS, Surabaya.
- Singleton, P. dan Sainsbury. 2006. Dictionary of Microbiology and Molecular Biology 3 rd Edition. John Wiley and Sons. Ltd, England.
- Sitanggang, A., Sophia L., dan Wu H. 2012. Mini Review: Aspects of Glucosamine Production Using Microorganisms. International Food Research Journal 19(2): 393-404.
- Smith, B. 1996. "Fundamentals of Fourier Transform Infrared Spectroscopy". CRC Press, Boca Raton.
- Stoscheck, C. 1990. Increased uniformity in the response of the coomassie blue protein assay to different proteins. Analytical Biochemistry 18(4):111-116.
- Stuart, B. 2004. "Infrared Spectroscopy: Fundamentals and Applications (Analytical Techniques in the Sciences (AnTs))". John Wiley & Sons Ltd., Chichester.
- Subramaniam, R. dan Vimala R. 2012. Solid state and submerged fermentation for the production of bioactive substances: a comparative study. I.J.S.N 3(3): 480-486.
- Suchiva K., Chandkrachang S., Methacanon P. and Peter M.G. 2002. Proceedings of the 5th Asia Pacific Chitin and Chitosan Symposium & Exhibition. Bangkok, Thailand.
- Suprianto. 2012. Karakterisasi kitin dan kitosan udang swallo. Akademia 16(2):60-65.
- Sutrisno, A. 2017. "Teknologi Enzim". UB Press, Malang.
- Suwignyo S. 1990. "Avertebrata Air". Lembaga Sumber Daya Informasi Institut Pertanian Bogor.
- Suyanto, S. R dan Enny P. T. 2009. "Panduan Budi Daya Udang Windu". Penebar Swadaya, Depok.

- Swastawati, F., Ima W., dan Eko S. 2008. Pemanfaatan Limbah Kulit Udang Menjadi Edible Coating untuk Mengurangi Pencemaran Lingkungan Jurnal Universitas Diponegoro 4(4).
- Szekalska M, PuciBowska A, Szymanska E, Ciosek P, Winnicka K. 2016. Alginate: Current use and future perspectives in pharmaceutical and biomedical applications. International Journal of Polymer Science. 8:1-17.
- Tricahyo, E. 1995. "Biologi dan Kultur Udang Windu (*Penaeus monodon Fabr*)". Akademika Pressindo, Jakarta.
- Tripathi, V.S., Dutta, P. K., dan Dutta, J. 2004. Chitin and chitosan: Chemistry, properties and applications. J. Sci. Ind. Res. India 63:20–31.
- Turah, Nurain, Bahri S, dan Nurakhirawati. 2017. Penentuan Waktu Paruh Enzim Amilase Amobil dari Kecambah Kacang Hijau (*Phaseolus aureus*) Pada Produksi Glukosa dari Maltodekstrin. Jurnal Riset Kimia KOVALEN 3(2): 150-157.
- Usysus, Z., Richert, J.S., dan Adameczyk, M.I. 2009. Protein Quality and Amino Acid Profile of Fish Product Available in Poland. Food chemistry 112:139-145
- Veronica. 2018. Isolasi dan Identifikasi Kapang Penghidrolisis Kitin yang Diisolasi dari Kulit Udang Windu. Skripsi Teknologi Pangan Universitas Pelita Harapan, Tangerang.
- Wahyuni, Sri. 2015. Study of colloidal chitin hydrolysis to produce the N acetyl glucosamine from shrimp shell waste using hydrochloric acid and nitric acid. Journal Food Technology Dept. Halu Oleo University 1:77-84.
- Widjaja, Tri, Natalia H., R. Darmawan, dan Setiyo G. 2010. Teknologi Immobilisasi Sel Ca-alginat Untuk Produksi Etanol Secara Fermentasi Kontinyu dengan *Zymomonas mobilis* Termutasi. Seminar Rekayasa Kimia dan Proses Universitas Diponegoro Semarang.
- Widhyastuti, N. 2007. Produksi kitinase ekstraseluler *Aspergillus rugulosus* 501 secara optimal pada media cair. Jurnal Berita Biologi 8(6): 547-553.
- Wignyanto dan Lestari, E. 2015. Penerapan mesin pengering mekanis untuk penguatan kapabilitas produksi pada industri kerupuk kentang sebagai upaya pemenuhan permintaan pasar. Journal of Innovation and Applied Technology 1(1):75-81.
- Wolff, A.M., Appel, K.F., Petersen, J.B., Poulson, U., Arnau, J., 2002. Identification and analysis of genes involved in the control of dimorphism in *Mucor circinelloides* (syn. racemosus). FEMS Yeast Res. 2:203-213.
- Xu, Y. C. Gallert, dan J. Winter. 2008. Chitin purification from shrimp wastes by microbial deproteination and decalcification. Appl Microbiol Biotechnol 79:687-697.

- Yani, E. dan Fajrin, S. 2013. Karakteristik pengeringan biji kopi berdasarkan variasi kecepatan aliran udara pada solar dryer. 20(1):17-22.
- Younes, I. dan Marguerite R. 2015. Review chitin and chitosan preparation from marine sources, structure, properties, and applications. Mar. Drugs 13: 1133-1174.
- Yuliarti, N. 2009. A to Z Food Supplement. Andi Offset; Suppl 1: 2.
- Zorlu N. dan Y. Goksungur. 2001. Production of Ethanol From Beet Molasses by Ca-Alginate Immobilized Yeast Cells in a Packed-Bed Bioreactor, Turk J. Biol. 25:265-275.

