# DAFTAR PUSTAKA


Adisasmito, Wiku. 2007. "Faktor Risiko Diare pada Bayi dan Balita di Indonesia: Systematic Review Penelitian Akademik Bidang Kesehatan Masyarakat." *Makara Kesehatan* 11 (1): 1-10.

Agustina, S., Swantara, I. D., dan Suartha, I. N. 2015. "Isolasi Kitin, Karakterisasi, dan Sintesis Kitosan dari Kulit Udang." *Jurnal Kimia* 9 (2): 271-278.

Ahmad, M., M.Y. Tay, K. Shameli, M.Z., Hussein, & J.J. Lim. 2011. "Green Synthesis and Characterization of Silver/Chitosan/Polyethylene Glycol Nanocomposites without any Reducing Agent." *Int. J. Mol. Sci* 12: 4872-4884.

Ahmed, E.M., Aggor, F.S. 2010. "Swelling Kinetic Study and Characterization of Crosslinked Hydrogels Containing Silver Nanoparticles." *Journal of Applied Polymer Science* 117: 2168-2174.

Akmaz, S., Adiguzel, E. D., Yasar, M., Erguven, O. 2013. "The Effect of Ag Content of the Chitosan-Silver Nanoparticle Composite Material on the Structure and Antibacterial Activity." *Advances in Materials Science and Engineering.* doi:10.1155/2013/690918.

Amin, A., Khairi, Allo. 2019. "Sintesis dan Karakterisai Kitosan dari Limbah Cangkang Udang Sebagai Stabilizer Terhadap Ag Nanopartikel." *Fullerene Journal Of Chemistry* 4 (2): 86-91.

An, N.T., Dong, Hanh, Nhi, Vu, Que, Thien. 2010. "Silver-N-Carboxymethyl Chitosan Nanocomposites: Synthesis and its Antibacterial Activities." *Journal of Bioterrorism & Biodefense* 1 (1). doi:10.4172/2157-2526.1000102.

Angka, S., Suhartono, M.T. 2000. *Bioteknologi Hasil Laut. Bogor : Pusat Pengkajian Sumberdaya dan Pesisir Lautan.* Bogor: Institut Pertanian Bogor.

Apriandanu, D. O. B, Wahyuni, Hadisaputro, Harjono. 2013. "Sintesis Nanopartikel Perak Menggunakan Metode Poliol Dengan Agen Stabilisator Polivinilalkohol (PVA)." *Jurnal MIPA* 36 (2): 157-168.

Aranaz, I., Acosta, and Heras. 2009. "Encapsulation of an Agrobacterium Radiobacter Extract Containing D-hydantoinase and D-carbamoylase Activities into Alginate–Chitosan Polyelectrolyte Complexes: Preparation of The Biocatalyst." *Journal of Molecular Catalysis B: Enzymatic* 58 (1-4): 54–64. doi:10.1016/j.molcatb.2008.11.006.

Asharani, P.V., Mun, G.I.K., Hande, M.P., dan Valiyaveettil, S. 2009. "Cytotoxicity and Genotoxicity of Silver Nanoparticles in Human Cells." *ACS Nano* 3 (2): 279–290. doi:10.1021/nn800596w.

Ayala, G., L.C.O. Vercik, T.A.V. Menezes, & A. Vercik. 2012. "A Simple and Green Method for Synthesis of Ag and Au Nanoparticles using Biopolymers and Sugars as Reducing Agent." *Mater. Res. Soc. Symp. Proc* 1386: 645-652.

Bader, H.J. and Birkholz, E. 1997. *Teaching chitin chemistry. In Muzzarelli, R.A.A and Peter, M.G. (eds.).* Italy: European Chitin Society. p.

Bahadory, M. 2008. "Synthesis of Noble Metal Nanoparticles." *Tesis* (Faculty of Drexel University).

Barrasa, J.G., Luzuriaga, J.M.L., Monge, M. 2010. "Silver Nanoparticles: Synthesis Through Chemical Methods in Solution and Biomedical Applications." *Central European Journal of Chemistry* 9 (1): 7-19. doi:10.2478/s11532-010-0124-x.

Bastaman, S. 1990. *Penelitian Limbah Udang Sebagai Bahan Industri Chitin dan Chitosan.* Bogor: Balai Besar Penelitian dan Pengembangan Industri Hasil Pertanian.

Berman, J., Sudbery, P.E. 2002. "Candida albicans: A Molecular Revolution Built on Lessons from Budding Yeast." *Nature Reviews Genetics* 3 (12): 918–930. doi:10.1038/nrg948.

Biologicals, Dalynn. 2014. "McFarland Standard for In Vitro Use Only." *Dalynn Biologicals.* Diakses June 5, 2021. http://www.dalynn.com/dyn/ck_assets/files/tech/TM53.pdf.

Brock, T. D., Madigan, M. T., Martinko, J. 2003. *Biology of Microorganisms.* New York: Prentice Hall.

Brooks G.F., Carroll K.C., Butel J.S., Morse S.A., & Mietzner T.A. 2013. *Jawetz, Melnick, & Adelberg's Medical Microbiology. 26th ed.* New York: Mc Graw-Hill.

Chatwal, G. 1985. *Spectroscopy Atomic and Molecule.* Bombay: Himalaya Publishing House.

Cheba, B.A. 2011. "Chitin and Chitosan: Marine Biopolymers with Unique Properties and Versatile Application." *Global Journal of Biotechnology & Biochemistry* 6: 149-153.

Chehade, Y., Siddique, A., Alayan, H., Sadasivan, N., Nusri, S., & Ibrahim, T. 2012. "Recovery of Gold, Silver, Palladium, and Copper from Waste Printed Circuit Boards." *Internationan Conference on Chemical, Civil, and Environtment Engineering (ICCEE 2012).*

Chien, R.-C., Yen, M.-T., & Mau, J.-L. 2016. "Antimicrobial and Antitumor Activities of Chitosan from Shiitake Stipes, Compared to Commercial Chitosan from

Crab Shells." *Carbohydrate Polymers* 138: 259-264. doi:10.1016/j.carbpol.2015.11.061.

Dalimartha, Setiawan. 2006. *Atlas Tumbuhan Obat Indonesia.* 4. Jakarta: Puspa Swara.

Dash, M., Chiellini, Ottenbrite, and Chiellini. 2011. "Chitosan—A Versatile Semi-Synthetic Polymer in Biomedical Applications." *Global Journal of Biotechnology & Biochemistry* 6: 981–1014.

Dawy, M., H.M. Rifaat, S.A. Moustafa, & H.A. Mousa. 2012. "Physicochemical Studies on Nano Silver Particles Preparated by Different Techniques." *Australian Journal of Basic and Applied Sciences* 6: 257-262.

Dewanti, S. dan M.T. Wahyudi. 2011. "Antibacteri Activity of Bay Leaf Infuse (Folia Syzygium Polyanthum Wight) to Escherichia Coli In-Vitro." *J. Med. Planta* 1 (4): 78-81.

Dror-Ehre, A., Mamane, H., Belenkova, T., Markovich, G., Adin, A. 2009. "Silver Nanoparticle–E. Coli Colloidal Interaction in Water And Effect on E. Coli Survival." *Journal of Colloid and Interface Science* 339: 521–526.

El-Kheshen, A.A. & S.F.G. El-Rab. 2012. "Effect of Reducing and Protecting Agents on Size of Silver Nanoparticles and Their Antibacterial Activity." *Der Pharma Chemica* 4: 53-65.

Fadhilah, Debby. 2016. *Ilmu Veteriner.* 18 Desember. Diakses Februari 20, 2020. https://ilmuveteriner.com/mekanisme-kerja-antimikroba/.

Farag, R.K. and Mohamed, R.R. 2012. "Synthesis and Characterization of Carboxymethyl Chitosan Nanogels for Swelling Studies and Antimicrobial Activity." *Molecules* 190-203. doi:10.3390/molecules18010190.

Fardiaz, S. 1993. *Analisis Mikrobiologi Pangan.* Bogor: Institut Pertanian Bogor.

—. 1992. *Mikrobiologi Pangan 1.* Jakarta: PT Gramedia Pustaka Utama.

Fernandez, L. L., Resender, C. X., Tavares, D. S., Soares, G. A., Castro, L. O., dan Granjeiro, J. M. 2010. "Cytocompatibility of Chitosan and Collagen-Chitosan Scaffolds for Tissue Engineering." *Polimeros* 21 (1): 1-6.

Fournout S., C. M. Dozois, M. Odin , C. Desautels, S. Peres, F. Herault, F. Daigle , C. Segafredo, J. Laffitte, E. Oswald, J. M. Fairbrother and I. P. Oswald. 2000. "Lack of a Role of Cytotoxic Necrotizing Factor 1 Toxin from Escherichia coli in Bacterial Pathogenicity and Host Cytokine Response in Infected Germfree Piglets." *Infection and Immunity* 68: 839-847.

Freeman-Cook, L., Freeman-Cook, K.D., Al-camo, I.E. and Heymann, D.L. 2006. *Staphylo-coccus aureus infections.* Infobase Publishing.

Geoprincy, G., Srri, B. V., Poonguzhali, U., Gandhi, N. 2013. "A review on green synthesis of silver nanoparticles." *Asian Journal of Pharamaceutical and Clinical Research* 6 (1): 8-12.

Goosen, M. F. A. 1997. *Application of Chitin and Kitosan.* USA: Technomic.

Guzman, M. G., Dille, Godet. 2009. "Synthesis of Silver Nanoparticles by Chemical Reduction Method and Their Antibacterial Activity." *International Journal of Chemical and Biomolecular Engineering* 2 (3): 104-111.

Gyliene, O., Inga R., Rima, T. and Ona, N. 2003. "Chemical Composition and Sorption Properties of Chitosan Produced from Fly Larva Shells." *Chemija (Vilnius)* 14 (3): 121-127.

Hafdani, F.N. and Sadeghinia. N. 2011. "A Review on Application of Chitosan as a Natural Antimicrobial." *Engineering and Technology* 5 (2). waset.org/Publication/6320.

Handaya, A., Laksmono, J.A. & Haryono, A. 2011. "Preparasi Koloid Nanosilver Menggunakan Stabilizer Polivinil Alkohol dan Aplikasinya Sebagai Antibakteri Pada Bakteri S. aureus dan E. coli." *Jurnal Kimia Indonesia* 12 (3): 202-208.

Hargono dan Djaeni, M. 2003. "Pemanfaatan Khitosan dari Kulit Udang sebagai Pelarut Lemak." *Prosiding Teknik Kimia Indonesia.* Yogyakarta. MB 11.1 - MB 11.5.

Harmita, Radji M. 2008. *Buku Ajar Analisis Hayati.* Jakarta: EGC.

Herdyastuti, N., T.J. Raharjo, Mudasir dan S. Matjeh. 2009. "Chitinase and chitinolytic microorganism; isolation characterization and potential." *Indonesian Journal of Chemistry* 9(1): 37-47.

Hettiarachchi, M.A. & P.A.S.R. Wickramarachchi. 2011. "Synthesis of Chitosan Stabilized Silver Nanoparticles Using Gamma Ray Irradiation and Characterization." *Journal of Science of the University of Kelaniya* 6: 65-75.

Hudaya, A., Radiastuti, Sukandar, Djajanegara. 2014. "Uji Aktivitas Antibakteri Ekstrak Air Bunga Kecombrang Terhadap Bakteri E. coli dan S. aureus sebagai Bahan Pangan Fungsional."

ICMSF. 1996. *Staphylococcus aureus. Ch 17 In: Microorganisms in food 5: Microbiological specifications of food pathogens.* London: Blackie Academic and Professional.

Irianto, K. 2014. *Bakteriologi, Mikologi & Virologi.* Disunting oleh F. Zulhendri. Bandung: CV ALFABETA.

Iswadi. 2016. “Fage Litik Spesifik Escherichia coli Pada Limbah Cair Pasar Tradisional di Kota Banda Aceh.” *Jurnal Biotik* 4 (2): 95-99.

Jawetz, E. 1995. *Mikrobiologi untuk Profesi Kesehatan.* 16th. Dialihbahasakan oleh Dr. H. Tonang. Jakarta: EGC.

Jawetz, E., J.L. Melnick, E.A. Adelberg, G.F. Brooks, J.S. Butel, dan L.N. Ornston. 2007. *Mikrobiologi Kedokteran.* 20th. Dialihbahasakan oleh H., C. Rachman, A. Dimanti, dan A. Diani Hartanto. Jakarta: EGC. Penerbit Buku Kedokteran.

Jiang, H., Moon, K., Zhang, Z., Pothukuchi, S., & Wong, C. 2006. “Variable Frequency Microwave Synthesis of Silver Nanoparticles.” *Journal of Nanoparticles Research* 8: 117-124.

Jiang, X.C., Chen, W.M., Chen, C.Y., Xiong, S.X. and Yu, A.B. 2010. “Role of Temperature in the Growth of Silver Nanoparticles Through a Synergetic Reduction Approach.” *Nanoscale Res Lett* 6 (1): 32. doi:10.1007/s11671-010-9780-1.

Kalaivani, R., Maruthupandy, M., Muneeswaran, T., Hameedha, B. A., Anand, M.,. 2018. “Synthesis of Chitosan Mediated Silver Nanoparticles (Ag NPs) for Potential Antimicrobial Applications.” *Frontier in Laboratory Medicine* 2: 30-35.

Kano, Naoki. 2018. “Carboxymethyl-Chitosan Cross-Linked 3-Aminopropyltriethoxysilane Membrane for Speciationof Toxic Chromium from Water.” *IntechOpen* 2: 20-44. doi:10.5772/intechopen.76035.

Khalil, A.M., Monem, Darwesh, Hashim, Nada,and Rabie. 2017. “Synthesis, Characterization, and Evaluation of Antimicrobial Activities of Chitosan and Carboxymethyl Chitosan Schiff-Base/Silver Nanoparticles.” *Journal of Chemistry* 2017: 1-11. doi:10.1155/2017/1434320.

Khan, T. A., Peh, K. K., Ch'ng, H. S. 2002. “Reporting Degree of Deacetylation Values of Chitosan: The Influence of Analytical Methods.” *J Pharm Pharmaceut Sci* 5 (3): 205-212. www.ualberta.ca/~csps.

Killay, Amos. 2013. “Kitosan Sebagai Anti Bakteri Pada Bahan Pangan Yang Aman Dan Tidak Berbahaya (Review).” *Prosiding FMIPA Universitas Pattimura 2013.* Ambon. 200-205.

Kong, Ming., Chen, Xi Guang., Xing, Ke., Park, Jin Hyun. 2010. “Review Antimicrobial Properties of Chitosan and Mode of Action : A State of The Art Review.” *International Journal of Food Microbiology* 144: 51-63.

Korbekandi, H. & S. Iravani. 2012. *Silver Nanoparticles, The Delivery of Nanoparticles.* Disunting oleh A.A. Hashim. Hashim: InTech.

Kumar, MNVR. 2000. “A review of chitin and chitosan applications.” *Reactive and Functional Polymers* 46 (1): 1-27.

Kurniasih, M., Dewi, R. S., Purwati, dan D., Zaki, M. Hermawan. 2014. “Optimum Conditions for The Synthesis of High Solubility Carboxymethyl Chitosan.” *Malaysian Journal of Fundamental and Applied Sciences* 10 (4): 189-194. doi:10.11113/mjfas.v10n4.277.

Kurniasih, M., Purwati, Dewi, R. S.,. 2018a. “Toxicity Tests, Antioxidant Activity, and Antimicrobial Activity.” *IOP Conference Series: Materials Science and Engineering* 349: 1-12. doi:doi:10.1088/1757-899X/349/1/012037.

Kurniasih, M., Purwati, Thika Cahyati, Ratna Stia Dewi. 2018b. “Carboxymethyl Chitosan as An Antifungal Agent on Gauze.” *International Journal of Biological Macromolecules* 119: 166-171. https://doi.org/10.1016/j.ijbiomac.2018.07.038.

Kurniasih, M., R. S. Dewi, Purwati, D. Hermawan, dan H. Y. Aboul-Enein. 2017. “Sinthesis, Characterization and Antifungal Activity of N-Methyl Chitosan and Its Application on the Gauze.” *Bentham Science* 13(4).

Kusumaputra. B. H., Zulkarnain. I. 2014. “Penatalaksanaan Kandidiasis Mukokutan Pada Bayi (Treatment of Mucocutaneous Candidiasis in Infant).” *Periodical of Dermatology and Venereology* 26 (2).

Kuswadji. 2002. *Kandidiosis di dalam Ilmu Penyakit Kulit dan Kelamin.* Jakarta: Fakultas Kedokteran UI.

Litaay, M., Sari, Gobel, Haedar. 2017. “Potensi Abalon Tropis Haliotis asinina L. Sebagai Sumber Inokulum.” *SPERMONDE* 3 (1): 42-46.

Miao, J., Chen, G., Gao, C. 2008. “Preparation and characterization of N, O-carboxymethyl chitosan/Polysulfone composite nanofiltration membrane crosslinked with epichlorohydrin.” *Desalination* 233 (1-3): 147-156. doi:10.1016/j.desal.2007.09.037.

Mohammadlou, M., Maghsoudi, H. and Jafarizadeh-Malmiri, H. 2016. “A review on green silver nanoparticles based on plants: Synthesis, potential applications and eco-friendly approach.” *International Food Research Journal* 23 (2): 446-463.

Montville, T.J., Matthews, K.R. 2008. *Food microbiology: An introduction.* 2nd. Washington D.C.: ASM Press.

Mourya, V.K., Inandar, N.N., Tiwari, A. 2010. “Carboxymethyl Chitosan and Its Aplicasions. [Review].” *Adv Mat. Left* 1 (1): 11-33.

Muliawati, D.N., dan Yulianti, E. 2018. "Uji Aktivitas Antimikroba Nanopartikel Perak dari Limbah Perak Hasil Penyepuhan Terhadap Bakteri S. aureus dan Fungi C. albicans." *Jurnal Prodi Biologi* 2 (7): 1-4.

Mutiawati, Vivi Keumala. 2016. "Pemeriksaan Mikrobiologi pada Candida albicans." *Jurnal Kedokteran Syiah Kuala* 16 (1): 53-63.

Muzzarelli, R., Cucchiara, M., Muzzarelli, C. 2002. "N-carboxymethyl chitosan in innovative cosmeceutical products." *Journal of Applied Cosmetology* 20 (3): 201-208.

Nugroho, N., Nurhayati, N. D., Utami, B. 2011. "Sintesis dan Karakterisasi Membran Kitosan untuk Aplikasi Sensor Deteksi Logam Berat." *Molekul* 6 (2): 123-136.

Nurwantoro dan Abbas, S. 2001. *Mikrobiologi Pangan Hewani Nabati.* Yogyakarta: Penerbit Kanisius.

Pelczar, M. J. dan Chan, E. C. S. 1988. *Dasar-dasar Mikrobiologi 2.* Dialihbahasakan oleh R. S., Imas, T., Tjitrosomo, S.S. dan Angka, S. L. Hadioetomo. Jakarta: UI Press.

Pillai, C. K. S., W. Paul, and C. P. Sharma. 2009. "Chitin and chitosan polymers: chemistry, solubility and fiber formation." *Progress in Polymer Science* 37 (7): 641–678.

Prasetyaningtyas, T., Prasetya, A. T., dan Widiarti, N. 2020. "Sintesis Nanopartikel Perak Termodifikasi Kitosan dengan Bioreduktor Ekstrak Daun Kemangi (Ocimum basilicum L.) dan Uji Aktivitasnya sebagai Antibakteri." *Indonesian Journal of Chemical Science* 37-43. http://journal.unnes.ac.id/sju/index.php/ijcs.

Pratiwi, S. T. 2008. *Mikrobiologi Farmasi.* Jakarta: Erlangga.

Puspawati, N. M., dan L N. Simpen. 2010. "Optimasi Deasetilasi Khitin dari Kulit Udang dan Cangkang Kepiting Limbah Restoran Seafood Menjadi Khitosan Melalui Variasi Konsentrasi NaOH." *Journal of Chemistry* 4 (1). https://ojs.unud.ac.id/index.php/jchem/article/view/2760.

Rahmawati, H., & Iskandar, D. 2014. "Sintesis Karboksimetil Kitosan Terhadap Pengaruh Konsentrasi Natrium Hidroksida dan Rasio Kitosan dengan Asam Monokloroasetat." *Jurnal Teknologi Technoscientia* 6 (2): 145-155. doi:doi.org/10.34151/technoscientia.v6i2.561.

Rahmawati, N., Sudjarwo, E. dan Widodo, E. 2014. "Uji aktivitas antibakteri ekstrak herbal terhadap bakteri Escherichia coli." *Jurnal Ilmu-Ilmu Peternakan* 24 (3): 24-31.

Rai, M., Yadav, A., Gade, A. 2009. "Silver Nanoparticles as A New Generation of Antimicrobials." *Biotechnology Advances* 27 (1): 76-83.

Rawle, Alan. 2015. "Basic Principles of Particle Size Analysis." *Yumpu.* Diakses Juni 23, 2020. https://www.yumpu.com/en/document/read/35370927/app-note-basic-principles-of-particle-size-analysis.

Rege, P. R, dan Block, L. H. 1999. "Chitosan Processing: Influence of Process Parameters During Acidic and Alkaline Hydrolysis and Effect of The Processing Sequence on The Resultant Chitosan's Properties." *Carbohydrate Research* 321 (3-4): 235-245. doi:10.1016/S0008-6215(99)00172-X.

Rekso, G. T dan Sudradjat, A. 2018. "Sintesis Ag Nano-Kitosan Dalam Pelarut Asam Asetat Dengan Iradiasi Sinar Gamma." *Pros. Semnas KPK* 1: 48-54.

Rinaudo, Marguerite. 2006. "Chitin and Chitosan: Properties and Applications." *Progress in Poymer Science* 31 (7): 603-632. doi:10.1016/j.progpolymsci.2006.06.001.

Roberts, G. A. F. 1992. *Chitin Chemistry.* London: The Macmillan Press LTD.

Rohyami, Y. Istiningrum. 2013. "Preparation of Chitin, Study of Physicochemical Properties and Biopesticide Activities." *EKSAKTA* 13 (1-2): 49-55.

Roldan, M.V., N. Pellegri, & O. de Sanctis. 2013. "Electrochemical Method for Ag-PEG Nanoparticles Synthesis." *Journal of Nanoparticles* 2013: 1-7. doi:10.1155/2013/524150.

Rosmania, R., Yanti, F. 2020. "Perhitungan Jumlah Bakteri di Laboratorium Mikrobiologi Menggunakan Pengembangan Metode Spektrofotometri." *Jurnal Penelitian Sains* 22 (2): 76-86.

Rudiyansyah, A.I., Wahyuningsih, N.E., Kusumanti, E. 2015. "Pengaruh Suhu, Kelembaban, Dan Sanitasi Terhadap Keberadaan Bakteri Eschericia Coli Dan Salmonella Di Kandang Ayam Pada Peternakan Ayam Broiler Kelurahan Karanggeneng Kota Semarang." *Jurnal Kesehatan Masyarakat* 3 (2): 196-201.

Rusli, P. R. 2011. *Pembuatan dan Karakterisasi Nanopartikel Titanium Dioksida. Fasa Anatase dengan Metode Sol Gel.* Skripsi, Medan: Universitas Negeri Medan.

Ryan, K.J. 1994. *Sherris medical microbiology an introduction to infectious diseases.* New York: McGraw-Hill.

Safitri, N. R. D., Dali, S., Fawwaz, M. 2016. "Isolasi Kitosan dari Limbah Cangkang Kepiting Bakau (Scylla serrata) dan Aplikasinya terhadap Penyerapan Trigliserida." *As-Syifa* 08 (02): 20-27.

Samiyatun. 2010. *Studi Penambahan Sifat Antibakteri Kitosan dan Komposit Kitosan-Ag dalam Proses Daur Ulang LImbah Kemasan Polipropilen.* Skripsi, Surakarta: Universitas Sebelas Maret.

Schauer, C. L., Chen, M. S., Chatterley, M., Eisemann, K Welsh, E. R., Price, R. R., Schoen, P. E., Ligler, F. S. 2003. "Color Changes in Chitosan and Poly(Allyl Amine) Films Upon Metal Binding." *Thin Solid Films* 434 (1-2): 250-257. doi:10.1016/S0040-6090(03)00055-5.

Sichani, G.N., Morshed, M., Amirnasr, M., Abedi, D. 2010. "In Situ Preparation, Electrospinning, and Characterization of Polyacrylonitrile Nanofibers Containing Silver Nanoparticles." *Journal of Applied Polymer Science* 116: 1021-1029.

Sileikaite, A., Prosycevas, I., Puiso, J., Juraitis, A. 2006. "Analysis of Silver Nanoparticles Produced by Chemical Reduction of Silver Salt Solution." *MATERIALS SCIENCE (MEDŽIAGOTYRA)* 12 (4): 287-291.

Smith, Robin. 2005. *Biodegradable Polymers for Industrial Application.* Cambridge England: CRC press.

Soemarie, Y. B., Apriliana, Indriastuti. 2018. "Uji Aktivitas Antibakteri Ekstrak Etanol Daun Glodokan Tiang (Polyalthia Longifolia S.) Terhadap Bakteri Propionibacterium Acnes." *Jurnal Farmasi Lampung* 7 (1): 15-27.

Sondi, I. and Salopek-Sondi, B. 2004. "Silver Nanoparticles as Antimicrobial Agent: A Case Study on E. coli as A Model for Gram-Negative Bacteria." *Journal of Colloid* 275 (1): 177-182.

Stephen, A.M. 1995. *Food Polysaccharides and Their Application.* Rondebosch: University of Cape Town, Marcel Dekker, Inc.

Stewart, C.M. 2003. *Staphylococcus aureus and staphylococcal enterotoxins. Ch 12 In:Hocking AD (ed) Foodborne microorganisms of public health significance. 6th ed.* Sydney: Institute of Food Science and Technology (NSW Branch).

Sulistyani, Martin dan Huda, N. 2017. "Optimasi Pengukuran Spektrum Vibrasi Sampel Protein Menggunakan Spektrofotometer Fourier Transform Infrared (FT-IR)." *Indonesian Journal of Chemical Science* 6 (2): 173-180.

Suptijah, P. 2004. "Tingkatan Kualitas Kitosan Hasil Modifikasi Proses Produksi." *Jurnal Pengolahan Hasil Perikanan Indonesia* 7 (1): 56-67.

Susanto, Awaluddin. 2018. *Bakteriologi (Antimikroba Alami Penyakit Typus).* Mojokerto: STIKes Majapahit.

Susanto, D., Sudrajat dan R. Ruga. 2012. "Studi Kandungan Bahan Aktif Tumbuhan Meranti Merah (Shorea leprosula Miq) Sebagai Sumber Senyawa Antibakteri." *Mulawarmnan Scientifie* 11 (2): 181-190.

Suseno, Natalia and Adiarto, Tokok and Wiranata, J.W. and Julio, M. 2017. "Pengaruh Berat Molekul Kitosan terhadap Kelarutan Karboksimetil Kitosan." *Simposium Nasional Polimer XI - 2017* 20. http://repository.ubaya.ac.id/id/eprint/30735.

Sutton, S. 2011. "Determination of Inoculum for Microbiological Testing." *Summer Journal* 15 (3): 49-53.

Taufan, M. R S. dan Zulfahmi. 2010. "Pemanfaatan Limbah Kulit Udang sebagai Bahan Anti Rayap (Biotermitisida) pada Bangunan Berbahan Kayu." *Skripsi*. Semarang: Universitas Diponegoro.

Tian, J., Wong, K. K., Ho, C. M., Lok, C. N., Yu, W. Y., Che, C. M., et al. 2007. "Topical Delivery of Silver Nanoparticles Promotes Wound Healing." *Chem. Med. Chem* 2: 129-136. doi:10.1002/cmdc.200600171.

Todar, K. 1998. *Bacteriology 330 Lecture Topics: Staphylococcus.* Wisconsin: Kenneth Todar University of Kenneth Todar University of.

Tolaimatea, A., J, Desbrieresb, M, Rhazia, dan A. dan Alaguic. 2003. "Contribution To The Preparation Of Chitins And Chitosans With Controlled Physio-Chemical Properties." *Polymer* 44 (26): 7939-7952.

Tortora, G.J., Funk,e B.R., Case, C.L. 1998. *Microbiology an Introduction.* 6th. California: Addison Wesley Longman, Inc.

Verlee, A., Mincke, S., Stevens, C.V. 2017. "Recent Developments in Antibacterial and Antifungal Chitosan and Its Derivatives." *Carbohydrate Polymers* 164: 268 –283. doi:10.1016/j.carbpol.2017.02.001.

Wahyudi, T., Sugiyana, D., Helmy, Q. 2011. "Sintesis Nanopartikel Perak dan Uji Aktivitasnya terhadap Bakteri E. coli dan S. Aureus." *Arena Tekstil* 26 (1): 55-60. doi:dx.doi.org/10.31266/at.v26i1.1442.

Wahyuningsih, N., dan Zulaika, E. 2018. "Perbandingan Pertumbuhan Bakteri Selulolitik Pada Media Nutrient Broth dan Carboxy Methyl." *Cellulose.Jurnal Sains dan Seni ITS* 7 (2): E36-E38.

Wang, L. dan Wang, A. 2008. "Adsorption Properties of Congo Red from Aqueaous Solution Onto N,O-Carboxymethyl-Chitosan." *Bioresource Technology* 99 (5): 1403-1408. doi:https://doi.org/10.1016/j.biortech.2007.01.063.

Wijayanto, S.O. dan Bayuseno, A. P. 2014. "Analisis Kegagalan Material Pipa Ferrulenickel Alloy N06025 pada Waste Heat Boiler Akibat Suhu Tinggi

Berdasarkan Pengujian : Mikrografi dan Kekerasan." *Jurnal Teknik Mesin S-1* 2 (1): 33-39. http://http://ejournal-s1.undip.ac.id/index.php/jtm.

Wikananda, D. A. R. N., Hendrayana, Pinatih. 2019. "Efek Antibakteri Ekstrak Ethanol Kulit Batang Tanaman Cempaka Kuning (M. Champaca L.) Terhadap Pertumbuhan Staphylococcus aureus." *E-JURNAL MEDIKA* 8 (5). https://ojs.unud.ac.id/index.php/eum.

Xie Y., Ye R. & Liu H. 2006. "Synthesis of Silver Nanoparticle in Reverse Micelles Stabilized by Natural Biosurfactant." *Colloids and Surfaces A: Physicochemical and Engineering Aspects* 279: 175-178. doi:10.1016/J.COLSURFA.2005.12.056.

Xu, Q., WeiShi, PanPan, JiaNing, YanYan, et al. 2019. "One-Pot Fabrication of Durable Antibacterial Cotton Fabric Coated with Silver Nanoparticles via Carboxymethyl Chitosan as A Binder and Stabilizer." *Carbohydrate Polymers* 204: 42-49. doi:10.1016/j.carbpol.2018.09.089.

Xue, X., Li, L., dan He, J. 2009. "The Performance of Carboxylmethyl Chitosan in Wash Off Reactive Dyiengs." *Carbohydrate Polimer* 75: 203-207.

Zhao, T., Sun, R.S., Yu, S., Zhang, Z., Zhou, L., Huang, H. & Du, R. 2010. "Size Controlled Preparation of Silver Nanoparticles by A Modified Polyol Method." *Colloids Surf A: Physicochem Eng Aspects* 366: 197- 202.

Zheng, Lian-Yiang, Zhu, Ziang-Feng. 2003. "Study on Antimicrobial Activity of Chitosan With Different Molecular Weights." *Carbohydrate Polymers* 54: 527-531. doi:10.1016/j.carbpol.2003.07.009.

Zinadini, S., Zinatizadeh, A. A., Rahimi, M., Vatanpour, V., Zangeneh, H., Beygzadeh, M. 2014. "Novel high flux antifouling nanofiltration membranes for dye removal containing carboxymethyl chitosan coated Fe3O4 nanoparticles." *Desalination* 349: 145-154. doi:10.1016/j.desal.2014.07.007.