

DAFTAR PUSTAKA

- Abraham, E., Deepa, B., Pothan, L.A., Jacob, M., Thomas, S., dan Cvelbard, U., 2011. Extraction of nanocellulose fibrils from lignocellulosic fibers: A novel approach. *Carbohydrate polymers* 86: 1468-1475.
- Bae, S., dan Shoda, M., 2004. Bacterial cellulose production by fed-batch fermentation in molasses medium, *Biotechnology Progress*. 20:1366–1371.
- Benziman, M., Haigler, C.H., Brown, R.M., White, A.R., dan Cooper, K.M., 1980. Cellulose biogenesis: polymerization and crystallization are coupled processes in *Acetobacter xylinum*. *Proceedings of National Academy of Science, USA* 77 (11): 6678–6682.
- Bielecki, S., Krystynowicz, A., Turkiewicz, M., dan Kalinowska H., 2005. Bacterial Cellulose. In: *Polysaccharides and Polyamides in the Food Industry*, A. Steinbüchel, S.K. Rhee (Eds.), Wiley- VCH Verlag, Weinheim, Germany 31–85.
- Bodhibukkana, C., Srichana, T., Kaewnopparat, S., Tangthong, N., Bouking, dan P., Martin, G. P., 2006. Composite membrane of bacterially-derived cellulose and molecularly imprinted polymer for use as a transdermal enantioselective controlled-release system of racemic propranolol. *Journal of Controlled Release* 113: 43–56.
- Brown, M.R.J., 1989. Cellulose microfibril assembly and orientation: Recent developments. *Journal of Cell Science* 2: 13–32.
- Brown RM., 2004. Cellulose structure and biosynthesis: what is in store for the 21st century. *Journal of Polymer Science* 42: 487–495
- Castro, C., Zuluaga, R., lvarez, C.I, Putaux, J.L., Caro, G, Rojas, O.J., Mondragon, I., dan Ganan, P. 2011. Bacterial cellulose produced by a new acid-resistant strain of *Gluconacetobacter*. *Carbohydrate Polymers* 84: 96-102.
- Chawla, P.R., Bajaj C.I., Survace S.A., dan Singhal R.S. 2009. Microbial cellulose: Fermentative production and applications. *Food Technoogy and . Biotechnology*. 47: 107-124.
- Chen, P., Cho, S.Y., dan Jin, H.J. 2010. Modification and applications of bacterial celluloses. *Polymer Science Macromolecular Research*, 18: 309-320.

- Chen, H.H., Chen, L.C., Huang, H.C., dan Lin, S.B., 2011. In situ modification of bacterial cellulose nanostructure by adding CMC during the growth of *G. xylinus*. *Cellulose* 18:1573-1583.
- Cheng, K.C., Catchmark J.M., dan Demirci, A., 2009. Effect of different additives on bacterial cellulose production by *Acetobacter xylinum* and analysis of material property. *Cellulose* 16: 1033-1045
- Czaja, W., Romanovicz, D., dan Brown, R.M. 2004. Structural investigations of microbial cellulose produced in stationary and agitated culture. *Cellulose* 11: 403-411.
- Dahman, Y., 2009. Nanostructured biomaterials and biocomposites from bacterial cellulose nanofibers. *Journal of Nanoscience and nanotechnology* 9:5102-5122.
- Eichhorn, S., Baillie, C., Zafeiropoulos, N., Mwaikambo L., Ansell, M., Dufresne A., Entwistle K., Herrera-Franco, P., Escamilla, G, dan Groom L 2001. Review: current international research into cellulosic fibres and composites. *Journal of Materials Science* 36(9): 2107–2131.
- Grande, C.J., Torres, F.G., Gomez, C.M., Troncoso O.P., Canet-Ferrer J., dan Martinez-Pastor, J., 2008. Morphological characterisation of bacterial cellulose–pati nanocomposites. *Material Science and Engineering* 16: 181–185.
- Gu, J., dan Catchmark, J.M., 2012. Impact of hemicelluloses and pectin on sphere-like bacterial cellulose assembly. *Carbohydrate polymers* 88: 547-557.
- Ha, J., Shehzad, O., Khan, S., Lee, S., Park, J., Khan, T., dan Park, J., 2008. Production of bacterial cellulose by a static cultivation using the waste from beer culture broth. *Korean Journal of Chemical Engineering* 25(4):812–815.
- Haigler, C.H., 1985. Cellulose chemistry and its applications. In: Zeronian SH, Nevell TP (eds) Ellis Horwood, England, pp 30–83.
- Hermansson, A.M., 1986. Water and fat holding. In: Mitchell JR, Ledward DA (eds) *Functional properties of food macromolecules*. Elsevier Applied Science Publications, London, England and New York.
- Hestrin S, dan Schramm M., 1954. Synthesis of cellulose by *Acetobacter xylinum*. *Biochemistry Journal* 58: 345-352.

- Hirai, A., Tsuji, M., dan Horii, F., 1997. Culture conditions producing structure entities composed of Cellulose I and II in bacterial cellulose . Cellulose 4: 239- 245.
- Hirai, A., Tsuji, M., Yamamoto, H., dan Horii, F., 1998. In situ crystallization of bacterial cellulose III. Influences of different polymeric additives on the formation of microfibrils revealed by transmission electron microscopy. Cellulose 5:201-213.
- Huang, H.C., Chen, L.C., Lin, S.B., Hsu, C.P., dan Chen, H.H., 2010. In situ modification of bacterial cellulose network structure by adding interfering substances during fermentation Bioresource Technology 101: 6084–6091.
- Iguchi, M., Yamanaka, S., dan Budhiono A., 2000. Review bacterial cellulose-master piece of nature's art. Journal of materials science 35: 261-270.
- Islam M., Khan, T., dan Park, J.K., 2012. Water Holding and Release Properties of Bacterial Cellulose obtained by in situ and ex situ modification. Carbohydrate Polymers 88: 596-603.
- Jagannath, A., Kalaiselvan, A., Manjunatha, S.S., Raju, P.S., dan Bawa, A.S. 2008. The effect of pH, sucrose and ammonium sulphate concentrations on the production of bacterial cellulose (Nata-de-coco) by *Acetobacter xylinum*. World Journal of Microbiology and Biotechnology 24: 2593-2599.
- Jiang, S.T., Ho M.L., dan Lee T.C., 1985. Optimization of the freezing conditions on mackerel and amberfish for manufacturing minced fish. Journal of Food Science 50:727–732.
- Jung, H.I., Jeong, J.H., Lee, O.M., Park, G.T., Kim, K.K., Park, H.C., Lee, S.M., Kim, Y.G, dan Soon H.J., 2010. Influence of glycerol on production and structural–physical properties of cellulose from *Acetobacter* sp. V6 cultured in shake flasks. Bioresource Technology 101:3602-3608.
- Keshk, S.M.A.S. dan Sameshima, K., 2005. Evaluation of different carbon sources for bacterial cellulose production. African Journal of Biotechnology 4: 478-482.
- Khan, T., Park, J.K., dan Kwon, J.H., 2007. Functional biopolymers produced by biochemicals technology considering applications in food engineering. Korean Journal of Chemical Engineering. 24(5): 816-826.
- Kirdponpattara, S., Khamkeaw, A., Sanchavanakit, N., Pavasant, P., dan Phisalaphong, M., 2015. Structural modification and characterization of

bacterial cellulose–alginate composite scaffolds for tissue engineering. *Carbohydrate Polymers* 132: 146-155.

Klemm, D., Heublein, B., Fink, H.P, dan Bohn, A, 2001. Cellulose: Fascinating biopolymer and sustainable raw material. *Angewandte Chemie International Edition*, 44:3358-3393

Kongruang, S., 2008. Bacterial cellulose production by *Acetobacter xylinum* strains from agricultural waste products. *Applied Biochemistry and Biotechnology* 148(1–3):245–256.

Kuga, S., Takagi, S., dan Brown, R.M., 1993. Native folded-chain cellulose II. *Polymer* 34 (15): 3293-3297.

Kurosumi, A., Sasaki, C., Yamashita, Y., dan Nakamura Y., 2008. Utilization of various fruit juices as carbon source for production of bacterial cellulose by *Acetobacter xylinum* NBRC 13693. *Carbohydrate Polymers* 76: 333–335.

Lin, S.B., Hsu, C.P., Chen, L.C., dan Chen, H.H., 2009. Adding enzymatically modified gelatin to enhance the rehydration abilities and mechanical properties of bacterial cellulose. *Food Hydrocolloids* 23: 2195–2203.

Lin, S.P., Calvar, I.L., Catchmark, J.M., Liu, J.R., Demirci, A., dan Cheng, K.C., 2013. Biosynthesis, production and applications of bacterial cellulose. *Cellulose* 20: 2191-2219

Mandal, A., dan Chakrabarty D., 2011. Isolation of nanocellulose from waste sugarcane bagasse (SCB) and its characterization. *Carbohydrate Polymers* 86: 1291-1299.

Moon, S.H., Park, J.M., Chun, H.W., dan Kim, S.J., 2006. Comparisons of Physical Properties of Bacterial Celluloses Produced in Different Culture Conditions Using Saccharified Food Wastes. *Biotechnology and Bioprocess Engineering*, 11: 26-31.

Matsuoka, M., Tsuchida, T., Matsushita, K., Adachi, O., dan Yoshinaga, A, 1996. synthetic medium for bacterial cellulose production by *Acetobacter xylinum* subsp. *Sacrofermentans*. *Bioscience Biotechnology and Biochemistry* 60: 575–579.

Nishiyama Y., Langan P., dan Chanzy H., 2002. Crystal structure and hydrogen bonding system in cellulose Ib synchrotron X-ray and neutron fiber diffraction. *Journal of The american Chemistry Society* 124 (31): 9074-9082.

- Ng, C.C., dan Shyu, Y.T., 2004. Development and production of cholesterol-lowering *Monascus-nata* complex. *World Journal of Microbiology & Biotechnology*, 20: 875–879.
- Nguyen, V.Y., Flanagan B., Gidley, M.J., dan Dykes, G.A., 2008. haracterization of cellulose production by a *Gluconacetobacter xylinus* strain from kombucha. *Current. Microbiology*. 57:449–453.
- Nakayama, A., Kakugo, A., Gong, J.P., Osada, Y., Takai M., Erata T., dan Kawano S., 2004. High mechanical strength double-network hydrogel with bacterial cellulose. *Advance Functional Materials* 14(11):1124–1128
- O’sullivan, A.C., 1997. Cellulose: the structure slowly unravels. *Cellulose* 4:173–207.
- Oh, S.Y., Yoo, D.I., Shin, Y., Kim, H.C., Kim, H.Y., Chung, Y.S., Park, W.H., dan Youk, J.H., 2005. Crystalline structure analysis of cellulose treated with sodium hydroxide and carbon dioxide by means of X-ray diffraction and FT-IR spectroscopy. *Carbohydrate Polymers* 340: 2376–2391.
- Okiyama, A., Motoki, M., dan Yamanaka, S., 1992. Bacterial cellulose II. Processing of the gelatinous cellulose for food materials. *Food Hydrocolloids*, 6 (5): 479–487.
- Park, S., Baker, J.O., Himmel, M.E., Parilla, P.A., dan Johnson, D.K. 2010. Cellulose crystallinity index: Measurement techniques and their Impact on interpreting cellulose performance. *Biotechnology for Biofuels* 3:10.
- Perez S., dan Samain D., 2010. Structure And Engineering Of Celluloses. *Advances In Carbohydrate Chemistry And Biochemistry* 64.
- Ramana, K.V., Tomar, A., dan Singh, L., 2000. Effect of various carbon and nitrogen sources on cellulose synthesis by *Acetobacter xylinum*. *World Journal of Microbiology and Biotechnology*. 16: 245–248.
- Rukaa, D.R., Simon, G.P., dan Deana, K.M. 2012. Altering the growth conditions of *G. xylinus* to maximize the yield of bacterial cellulose. *Carbohydrate Polymers* 89: 613–622.
- Segal, L., Creely, J. J., Martin, A. E. J., dan Conrad, C. M., 1959. An empirical method for estimating the degree of crystallinity of native cellulose using the X-ray diffractometer. *Textile Research Journal* 29:786–794.
- Sheykhnazari, S., Tabarsaa, T., Ashorib, A., Shakeric, A., dan Golalipourd, M. 2011. Bacterial synthesized cellulose nanofibers: Effects of growth times and

culture mediums on the structural characteristics. Carbohydrate Polymers 86:1187-1191.

Shezad, O., Khan, S., Khan, T., dan Park, J.K., 2010. Physicochemical and mechanical characterization of bacterial cellulose produced with an excellent productivity in static conditions using a simple fed-batch cultivation strategy. Carbohydrate Polymers 82: 173–180.

Shi, Z., Zhang, Y., Philips, G.O., dan Yang, G., 2014. Review, Utilization of Bacterial cellulose in food. Food hydrocolloids 35: 539-545.

Shibazaki, H., Saito, M., Kuga, S., dan Okano, T., 1998. Native cellulose II production by *Acetobacter xylinum* under physical Constraints. Cellulose, 5: 165-173.

Shoda, M. dan Sugano, Y., 2005. Recent advances in bacterial cellulose production. Biotechnology and Bioprocess Engineering 10: 1-8.

Suharjono, Ardyati, T., Zubaidah, E., Munawaroh, Pradani C., 2012. Produksi selulosa bakterial dari air buah kelapa dalam berbagai konsentrasi sukrosa dan urea. Biota 17

Sundari, M.T., dan Ramesh, A., 2012. Isolation and characterization of cellulose nanofibers from the aquatic weed water hyacinth *Eichhornia crassipes*. Carbohydrate polymers 87: 1701-1705.

Suzuki, S., Suzuki F., Kanie Y., Tsujitani, K., Hirai, A., Kaji, H., dan Horii, F., 2012. Structure and crystallization of sub-elementary fibrils of bacterial cellulose isolated by using a fluorescent brightening agent. Cellulose 19: 713-727

Tokoh C., Takabe, K.J., dan Fujita, M., 2002. Cellulose synthesized by *Acetobacter xylinum* in the presence of plant cell wall polysaccharides, Cellulose, 9: 65–74.

Tome, L.C., Brandao, L., Mendes, A.M., Silvestre, A.J., Neto, C.P., dan Gandini, A., 2010. Preparation and characterization of bacterial cellulose membranes with tailored surface and barrier properties. Cellulose, 17 (6): 1203-1211.

Tomita, Y. dan Kondo, T., 2009. Influential factors to enhance the moving rate of *Acetobacter xylinum* due to its nanofiber secretion on oriented templates. Carbohydrate Polymers 77: 754-759

Toyosaki H, Naritomi T, Seto A, Matsuoka M, Tsuchida T, dan Yoshinaga F., 1995. Screening of bacterial cellulose-producing acetobacter strains suitable

for agitated culture. *Bioscience Biotechnology and Biochemistry* 59(8):1498–1502

Vanderhart, D.I dan Atalla, R.H. 1984. Studies of microstructure in native celluloses using solid-state ¹³C NMR. *Macromolecules* 17: 1465-1472.

Wan Y, Gao C, Han M, Liang H., Ren K, Wang Y, dan Luo H , 2011. Preparation and characterization of bacterial cellulose/heparin hybrid nanofiber for potential vascular tissue engineering scaffolds. *Polym Adv Technol* 22: 2643–2648

Watanabe, K., Tabuchi, M., Morinaga, Y., dan Yoshinaga, F. 1998. Structural features and properties of bacterial cellulose produced in agitated culture. *Cellulose*, 5: 187-200.

Xiao, L., Mai, Y., He, F., Yu, L., Zhang, L., dan Tang, H., 2012. Bio-based green composites with high performance from poly (lactic acid) and surface modified microcrystalline cellulose. *Journal of Materials Chemistry* 22(31): 15732-15739.

Yamada, Y., dan Yukphan, P., 2008. Genera and species in acetic acid bacteria. *International Journal of Food Microbiology* 125:15–24.

Yan, Z., Chen, S., Wang, H., Wang, B., dan Jiang, J., 2008. Biosynthesis of bacterial cellulose/multi-walled carbon nanotubes in agitated culture. *Carbohydrate Polymers* 74: 659–665.

Yudianti, R., Indrarti, L., dan Azuma, J., 2007. Structure and Physical Properties of Natural Gellous Materials. *Journal of Applied Sciences* 7 (4): 580 – 584.

Yusuf, D., Cahyanto, M.N., dan Utami, T., 2015. Pemanfaatan ekstrak buah semu jambu mete (*anacardium occidentale l.*) sebagai media fermentasi untuk produksi nata menggunakan *Gluconacetobacter xylinus* BTCC B796 (Thesis). Fakultas Teknologi Pertanian, Universitas Gadjah Mada, Yogyakarta.

Zeng, X., Liu, J., Chen, J., Wang, Q., Li, Z., dan Wang H. 2011. Screening of the common culture conditions affecting crystallinity of bacterial cellulose. *Journal Indian Microbiologi Biotechnology* 38: 1993-1999.

Zhou, L.L., Sun, D.P., Hu, L.Y., Li, Y.W., dan Yang, J.Z., 2007. Effect of addition of sodium alginate on bacterial cellulose production by *Acetobacter xylinum*. *Journal of Industrial Microbiology and Biotechnology* 34: 483–489.