

DAFTAR PUSTAKA

- Adav, S. S., Chao, L. T., dan Sze, S. K., 2012, Quantitative Secretomic Analysis of *Trichoderma reesei* Strains Reveals Enzymatic Composition for Lignocellulosic Biomass Degradation. *Mol Cell Proteomics*, 1-15.
- Ahamed, A. P. dan Vermette. 2008. Culture-based strategies to enhance cellulose enzyme production from *Trichoderma reesei* RUTC 30 in bioreactor culture conditions. *Journal of Biochemical Engineering* 40: 399–407.
- Anonim, 2015. Materi Pertanian-Materi Pertanian Terpadu Online. Diakses Pada tanggal 16 September 2020. Tersedia di <http://www.materipertanian.com>.
- Anonim, 2009, Kumbang Jati Pandang, <http://indragsiublog.multiply.com/journal/item/5>, diakses tanggal 19 September 2020
- Anindyawati, T. 2009. Prospek Enzim dan Limbah Lignoselulosa untuk Produksi Bioetanol. Pusat Penelitian Bioteknologi-LIPI
- Annamalai, N. dan Nallusamy, S. 2016. Production of polyhydroxybutyrate from wheat bran hydrolysate using *Ralstonia eutropha* through microbial fermentation. *Journal of Biotechnology* 237 : 13 – 17.
- Aprilia, D. 2015. Bioconversion of unpretreated and pretreated rice straw to L (+)-lactic acid using enzymatic hidrolisis and absorbed carrier solid-state fermentation by *Rhizopus oryzae*. *Tesis*. Teknologi pertanian. Universitas Gadjah Mada. Yogyakarta
- Ali, H. K. Q. dan Zulkali, M. M. D., 2011. Utilization of agro-rseidual lignocellulosic sub-stances by using solid state fermentation: a review. *Croatian Journal of Food Technology, Biotechnology, and Nutrition*. 6, 5-12
- Asben, A., 2012, Rekayasa Proses Produksi Hidrolisat dari Ampas Sagu Sebagai Substrat untuk Pembuatan Bioetanol, *Tesis*, Sekolah Pascasarjana, Institut Pertanian Bogor, Bogor.
- Askolin, S., 2006, *Characterization of the Trichoderma reesei hydrophobins HFBI and HFBII*, Disertasi, Helsinki University of Technology

- Beg, Q.K., M. Kapoor, L. Mahajan, dan GS. Hoondal. 2001. Microbial xylanases and their industrial applications: a review, *Appl Microbiol Biotechnol.* 56:326–338.
- Botanri,S., Setiadi, D., Guhardja, E., Qayim, I., Prasetyo, L. B., 2011, Studi ekologi tumbuhan sagu (*Metroxylon spp.*) dalam komunitas alami di Pulau Seram, Maluku: *Jurnal Penelitian Hutan Tanaman* 8, hal: 135-145.
- Cara, C., Ruiz, E., Ballesteros, M., Manzanares, P., Negro, M. J., dan Castro, E., 2008, Production of fuel ethanol from steam-explosion pretreated olive tree pruning, *Fuel*, 87, 692–700.
- Chesson, A., 1981, Effects of Sodium Hydroxide on Cereal Straws in Relation to The Enhanced Degradation of Structural Polysaccharides by Rumen Microorganisms, *J. Sci. Food Agric.*, 32, 745–758.
- Datta, R., 1981, Acidogenic Fermentation of Lignocellulose-Acid Yield and Conversion of Components. *Biotechnology and Bioengineering*, XIII, 2167 – 2170.
- Dehani, F.R., Argo, B.D. dan Yulianingsih, R., 2013, Pemanfaatan iradiasi gelombang mikro untuk memaksimalkan proses pretreatment degradasi lignin jerami padi (pada produksi bioetanol). *Jurnal Bioproses Komoditas Tropis* 1(1): 13-20.
- Dewi, P., Indrati, R., Millati, R., dan Sardjono, S., 2018, Effect of physical pretreatment on microstructure of cassava stem fibers and *Aspergillus niger* FNCC 6114 growth through solid state fermentation. *International Journal of Science and Research (IJSR)*. 7(3) : 995–998.
- Fang, H. dan Xia, L. 2013. High activity cellulase production by recombinant *Trichoderma reesei* ZU-02 with the enhanced cellobiohydrolase production, *Bioresour. Technol.* 144 : 693 – 697
- Farkas, C., Rezessy-Szabó, J.M., Gupta, V.K., Truong, D.H., Friedrich, L., Felföldi, J. dan Nguyen, Q. D., 2019, Microbial saccharification of wheat bran for bioethanol fermentation. *Journal of Cleaner Production*, 240 : 1 - 9.

- Fengel D dan Wegener G. 1995. Kayu: Kimia, Ultrastruktur, Reaksi-reaksi. "Ed ke-1. Harjono Sastroamidjoyo penerjemah: Soenardi Prawirohatmodjo, penyunting. Gajah mada University Press. Terjemahan dari: Wood: Chemistry, Ultrastructure, reactions.
- Flach, M., 1980, The Main Moisture-Rich Starchy Staples, Sago. The Second International Sago Symposium in Kuala Lumpur, Malaysia. Martinus Nijhoff Pub. The Hague/Boston/London
- Flach, M., 1997. *Sago palm. Metroxylon sagu Rottb. Promoting the conservation and use of underutilized and neglected crops*. Rome: International Plant Genetic Resources Institute
- Flach, M., 2005, A Simple Growth Model for Sago Palm cv. Molat-Ambutrub. And It's Applications for Cultivation. Abstracts of The Eight International Sago Symposium in Jayapura, Indonesia. Japan *Society for Promotion Science*.
- Frazier, W. C. dan Weshoff D. C., 1978, *Food microbiology*. Tata McGraw Hill Book Publication, Co. New Delhi.
- Garrote, G., Cruz, J.M., Domínguez, H., dan Parajó, J.C., 2008. Non-isothermal autohydrolysis of barley husks: product distribution and antioxidant activity of ethyl acetate soluble fractions. *J. Food Eng.* 84, 544–552
- Gierer, J., 1985, Chemistry of Delignification part I. General Concept and Reation During pulping. *Wood Science and technology* 20 (1), 1-33
- Grigoryan, K., dan Hakobyan, L., 2015. Effect of water activity, pH, temperature on contamination level on dried vine fruite by filamentous fungi during storage. *In Proceeding of The Yerevan State University Chemistry dan Biology*, No. 3:23-28
- Gunam, I.B.W., dan Antara, N.S., 1999, Study on Sodium Hydroxide Treatment of Corn Stalk to Increase its Cellulose Saccharification on Enzymatically by Using Culture Filtrate of *Trichoderma reesei*. *Gitayana, Agric. Technol. J* 5(1): 34-38

- Gusakov, A. V., Kondratyeva, E. G., dan Sinitsyn, A. P. 2011. Comparison of two methods for assaying reducing sugars in the determination of carbohydrase activities. *International Journal of Analytical Chemistry* 10(1): 1-4
- Harsanto, P.B. 1986. *Budidaya dan Pengolahan Sagu*. Kanisius. Yogyakarta
- Harsono, B.P. 1986. *Budidaya dan Pengolahan Sagu*. Kanisius. Yogyakarta.
- Hartono, R., Jayanudin, dan Salamah, 2010, Pemutihan Pulp Eceng Gondok Menggunakan Proses Ozonasi. Seminar Rekayasa Kimia Dan Proses 2010. Jurusan Teknik Kimia Fakultas Teknik. Universitas Diponegoro Semarang. Semarang. 5 hlm
- Haryanto, B. dan Pangloli, P., 1992, *Potensi dan Pemanfaatan Sagu*. Kanisius. Yogyakarta.
- Haryanto, B. dan Philipus, 1992, *Potensi dan Pemanfaatan Sagu*. Kanisius. Yogyakarta.
- He, Y.F., Pang, Y., Liu, Y., Li, X., dan Wang, K., 2008, Physicochemical Characterization of Rice Straw Pretreated with Sodium Hydroxide in The Solid State for Enhancing Biogas Production. *Energy & Fuel*
- Heradewi, 2007, Isolasi Lignin dari Lindi Hitam Proses Pemasakan Organosolv Serat Tandan Kosong Kelapa Sawit (TKKS). Bogor: IPB.
- Hidayat, M. R., 2013, Teknologi *Pretreatment* Bahan Lignoselulosa dalam Proses Produksi Bioetanol. *BIOPROPAL INDUSTRI Vol. 4* No. 1: 33-49
- Howard, R.T., Abotsi, E., Jansen van Rensburg, E.L., dan Howard, S., 2003, Lignocellulose biotechnology: Issue of bioconversion and enzyme production, *African Journal of Biotech.* 2, 602-619.
- Jalaluddin dan Rizal, S., 2005, Pembuatan pulp dari jerami padi menggunakan natrium hidroksida, *Jurnal Sistem Teknik Industri* 6(5): 53-56.
- Jonsson, L.J. dan Martin, C., 2015, Pretreatment of lignocellulose: Formation of inhibitory by-products A review and strategies for minimizing their effects. *Bioresource Technology*.
- Kaar, W.E. dan Holtzaple, M.T., 2000, Using Lime Pretreatment to Facilitate the Enzymic Hydrolysis of Corn Stover. *Biomass and Bioenergy*. 18 : 189-199

- Kiat, I.J. 2006. Preparation and characterization of carboxymethyl sago waste and its hydrogel. *Tesis*. Universitas Putra Malaysia
- Kim, S. dan Holtzapple, M.T., 2006, Delignification kinetics of corn stover in lime pretreatment. *Bioresource Technology* 97 : 778-785
- Kompiang, I.D., 1995, Pemanfaatan Limbah Sagu sebagai Ransum Ternak Ayam. *Hasil Penelitian APBN 1994/1995. Balai Penelitian Ternak Ciawi*. Bogor
- Knauf, M. dan Moniruzzaman, M., 2004,. Lignocellulosic biomass processing: A perspective. *International sugar journal*, 106(1263), 147-150
- Kumar, P., Barrett, D.M., Delwiche, M.J., dan Stroeve, P., 2009, Methods for Pretreatment of Lignocellulosic Biomass for Efficient Hydrolysis and Biofuel Production. *Ind. Eng. Chem. Res.* 48. 3713-3729
- Lee, V.H., Hamid, S.B.A dan Zain, S.K., 2014, Conversion of lignocellulosic biomass to nanocellulose: Structure and chemical process. *The scientific world journal*: Hindawi Publishing Corporation.
- Li, X., She, Y., Sun, B., Song, H., Zhu, Y., Lv, Y., dan Song, H., 2010, Purification and characterization of acellulase-free, thermostable xylanase from *Streptomyces rameus* L2001 and its biobleaching effect on wheat straw pulp. *Biochemical Engineering*.52: 71–78.
- Loebis, E.H., 2008, Optimasi Proses Hidrolisis Kimiawi dan Enzimatis Tandan Kosong Kelapa Sawit Menjadi Glukosa untuk Produksi Etanol. *Skripsi*. Institut Pertanian Bogor, Bogor.
- Maas, R. H. M., 2008, Microbial conversion of lignocellulose-derived carbohydrates into bioethanol and lactic acid. Wageningen University. Netherlands.
- Menon V dan Rao M., 2012, Trends in bioconversion of lignocellulose: Biofuels, platform chemicals & biorefinery concept. *Progress in Energy and Combustion Science* 8(4): 522–550.
- Mergner, R., Janssen R., Rutz D., de Bari I., Sissot F., Chiaramonti D., Giovannini A., Pescarolo S., dan Nistri R., 2013, Lignocellulosic Ethanol Process and Demonstration. A Handbook Part I. WIP Renewable Energies. Munich.

- Miller, G.L., 1959, Use of dinitro salicylic acid reagent for determination of reducing sugar. *Ann. Chem* 31: 426-428.
- Modenbach, A., 2013, Sodium Hydroxide Pretreatment of Corn Stover and Subsequent Enzymatic Hydrolysis: An Investigation of Yields, Kinetic Modeling and Glucose Recovery. *Theses and Dissertations—Biosystems and Agriculture Engineering*.
- Mosier, N. dan Hendrickson, 2005, Features of promising technologies for pretreatment of lignocellulose biomass. *Bioresource Technology*. 96: 673-686.
- Novarianto, H. dan Mahmud, Z., 1989, Sagu Pendamping Beras di Masa Depan, *Buletin Balitka J. 7*: 1-8.
- Nugroho, T., 2002, Bioteknologi fungi biokontrol dan pengembangannya. Erlangga. Jakarta.
- Nuraini H. Y., Abbas, Rizal, dan Marlinda Y., 2005, Pemanfaatan ampas sagu fermentasi kaya β -karoten dalam ransum terhadap produksi dan kualitas telur ayam ras. *J Ilmiah Ilmu-ilmu Peternakan Jambi*. 8:55-59.
- Orinda, E., 2016, Konversi mikrobiologis jerami padi (*Oryza sativa L.*) menjadi etanol melalui proses hidrolisis enzimatis oleh kombinasi enzim yang dihasilkan *Aspergillus niger* FNCC 6114 dan *Trichoderma reesei* Pk1J2 dan fermentasi etanol oleh *Mucor indicus*. *Tesis*. Fakultas Teknologi Pertanian. UGM. Yogyakarta.
- Oriol, e., Raimbault, M., Roussos, S., dan Viniegra-gonzales, G., 1988, Water and water activity in the solid state fermentation of cassava starch by *Aspergillus niger*. *Appl. Microbial. Biotechnol*, 27. 498-503.
- Orth A.B., Royse D.J., Tien, M., 1993, Ubiquity of lignin degrading peroxidases among various wood-degrading fungi. *Appl Environ Microbiol* 59:4017-4023.
- Oswaldo, ZS., Panca, PS., dan Faizal, M., 2012, Pengaruh Konsentrasi Asam dan Waktu Pada Proses Hidrolisis dan Fermentasi Pembuatan Bioetanol dari Alang-Alang. *Jurnal Teknik Kimia*. No. 2, Vol. 18, April.

- Pigden, W. J. dan Bender F., 1978, Utilization of lignosellulosa by ruminant. In ruminant nutrition. Selected articles from the world animal review. FAO. United Rome. P. 30 - 33.
- Prabhakar, A., Krishnaiah, K., Janaun, J., dan Bono, A., 2005, An overview of Engineering Aspect of Solid State Fermentation. *Malaysian Journal of Microbiology*, I(2), 10-16.
- Rahardjo, Y.S.P., 2005, Fungal Mats in Solid-State Fermentation PhD, *Thesis*, Wageningen University, Wageningen : The Netherlands.
- Rianse, M. I. K. B., Millati, R, dan Indrati, R., 2020, Produksi Gula Reduksi dari Limbah Ampas Sagu (*Metroxylon sagu*) Melalui Perbedaan Waktu Inokulasi *Trichoderma reesei* Pk₁J₂ dan *Aspergillus niger* FNCC 6114, *Tesis*, Fakultas Teknologi Pertanian, Universitas Gadjah Mada, Yogyakarta.
- Richana, N., 2002, Produksi dan prospek enzim xilanase dalam pengembangan bioindustri di Indonesia. *Buletin AgroBio*. 5(1): 29–36.
- Rimbani, M., 2013, Optimasi Bio-Pretreatment Jerami Padi Secara Fermentasi Fase Padat Oleh Isolat Actinomycetes AcP-1 dan AcP-7. *Skripsi*. Universitas Lampung. Lampung
- Ruddle, K., Johnson D., Townsend P. K., dan Rees J. D., 1978, Palm Sago A Tropical Starch from Marginal Lands. An East-West Center Book. Honolulu.
- Rumalatu. F.J. 1981. Distribusi dan potensi pati beberapa sagu (*Metroxylon sp.*) di daerah Seram Barat. Karya Ilmiah. Fakultas Pertanian/Kehutanan yang berafiliasi dengan Fateta IPB, Bogor.
- Ryu D.D. dan Hospodka, 1980, Quantitative physiology of *Penicillium chrysogenum* in penicillin fermentation, *Biotechnology and Bioengineering*, vol XXII, hal 289-298, Jnc, New York.
- Safan. 2008. Produksi enzim selulase oleh *Aspergillus niger* dengan substrat jerami dalam *Solid State Fermentation*.
- Sakiyah, N., Tigor, Ralibi, Achmad, dan Heru, S., Desain Pabrik Pengolahan Tepung Sagu. *Jurnal Teknik Pomits* Vol. 2, No. 1, (2013) ISSN: 2337-3539 (2301-9271 Print).

- Salehian, Peyman, Karimi K., Zilouei H., dan Jeihanipour A., 2013, Improvement of Biogas Production from Pine Wood by Alkali Pretreatment, *Fuel*.
- Sanjaya, W. dan S. Adrianti, 2010, Optimasi Hidrolisis Enzimatis Jerami Padi Menjadi Glukosa Untuk Bahan Baku Biofuel Menggunakan Selulase dari *Trichoderma reesei* dan *Aspergillus niger*, *Skripsi*, Institut Teknologi Sepuluh November.
- Sari, F. P dan Budiyono, 2014, Enhanced biogas production from rice straw with various pretreatment : a review, *Waste Technology (WasTech)*, Vol. 2(1):17-25.
- Sathendra, E. R., Baskar, G., Praveenkumar, R., dan Gnansounou, E., 2019, Bioethanol production from palm wood using *Trichoderma reesei* and *Kluyveromyces marxianus*. *Bioresource Technology*. 271 : 345–352.
- Schacht, C., Zetzl, C., dan Brunner, G., 2008, From plant materials to ethanol by means of supercritical fluid technology *The Journal of Supercritical Fluids*, 46: 299-321.
- Singhania, R.R., Sukamaran, S.K., Patel, A.K., Laroche, C., dan Pandey, A., 2010. Advancement and comparative profiles in the production technologies using solid state and submerged fermentation for microbial cellulases. *Enzyme and Microbial Technology* 46: 541-549.
- Sun, Y., dan Cheng, J., 2002, Hydrolysis of lignocellulosic material for ethanol production: a review. *Bioresource Technology*, 83: 1-11.
- Sutarno, R.J., Zaharah, T.A., & Idiawati, N. 2013. Hidrolisis Enzimatis Selulosa dari Ampas Sagu Menggunakan Campura Selulase dari *Trichoderma reesei* dan *Aspergillus niger*. *Jurnal Kimia Kathulistiwa* No1. Vol:2, 52-57.
- Sutikno, Marniza, dan Yanti, M.F., 2015, Pengaruh Perlakuan Awal Basa dan Asam Terhadap Kadar Gula Reduksi Tandan Kosong Kelapa Sawit. *Jurnal Teknologi Industri dan Hasil Pertanian*. 20(1): 1-10.
- Szczodrak, J. dan Fiedurek, J., 1996, Technology for conversion of lignocellulosic biomass to ethanol. *Biomass Bioenerg.*, 10, 367-375.

- Taherzadeh, M.J. dan Karimi, K., 2008, Pretreatment of Lignocellulosic Wastes to Improve Ethanol and Biogas Production: A Review, *International Journal of Molecular Sciences*, 9, 1621-1651.
- Tarkow, H. dan Feist, W.C., 1969, A Mechanism for Improving The Digestibility of Lignocellulosic Materials with Dilute Alkali and Liquid NH₃ Advance Chemistry Series 95, *American Chemical Society*, Washington DC, 197-218.
- Thangavelu, S.K., Abu, S.A., dan Farid, N.A., 2014, Bioethanol production from sago pith waste using microwave hydrothermal hydrolysis accelerated by carbon dioxide. *Applied Energy* 128 : 277 – 283.
- Trismillah dan Lutfi., 2009, Pengaruh pH terhadap proses ultrafikasi xilanase. *Jurnal Sains Dan Teknologi Indonesia* 11: 76-83.
- Yang, L., Cao, J., Mao, J., dan Jin, Y., 2013, Sodium carbonate-sodium sulfite pretreatment for improving the enzymatic hydrolysis of rice straw. *Industrial Crops and Products* 43: 711–717.
- Yoon, L. W., Ang, T. N., Ngoh, G. C., Chua, M.A.S., 2014, Fungal solid state fermentation and various methods of enhancement in cellulose production. *Biomass and bioenergy*, 67, 319-338. DOI: 10.1016/j.biombio3.2014.05..013.
- Zhu, J.Y., Pan, X.J., Wang, G.S., dan Gleisner, R., 2009, Sulfite pretreatment (SPORL) for robust enzymatic saccharification of spruce and red pine. *Bioresour. Technol.* 100, 2411–2418.