



DAFTAR PUSTAKA

- AOAC. 2005. *Official Methods of Analysis of The Association of Analytical Chemist*. Virginia USA: Association of Official Analytical Chemist, Inc.
- Adam M. R., and Moss, M. O. 2008. *Food Microbiology: Third Edition*. Cambridge : RSC Publishing.
- Asrul. 2009. Populasi Jamur Mikotoksigenik dan Kandungan Aflatoksin pada Beberapa Contoh Biji Kakao Asal Sulawesi Tengah. *Jurnal Agroland* 16(3) : 258-267
- Avis, T. J., & Belanger, R. R. (2001). Specificity and mode of action of the antifungal fatty acid cis-9-heptadecenoic acid produced by *Pseudozyma flocculosa*. *Applied and Environmental Microbiology*, 67, 956e960.
- Beckett S. T. 2008. *The science of Chocolate: 2nd Edition*. Royal Society of Chemistry, UK.
- Bergsson, G., Arnfinnsson, J., Steingrimsson, O., & Thormar, H. (2001). In vitro killing of *Candida albicans* by fatty acids and monoglycerides. *Antimicrobial Agents and Chemotherapy*, 45, 3209e3212.
- Blagojev N., M. Skrinjar, S.V. Moracanin and V. Soso. (2012). Control of Mould Growth and Mycotoxin Production by Lactic Acid Bacteria Metabolites. *Romanian Biotechnological Letters* 17 (3) : 7219-7226.
- Bianchini A. (2015). Lactic Acid Bacteria as Antifungal Agents. *Dalam: Holzapfel W.* (ed.). *Advances in Fermented Foods and Beverages*. hal 333-353. Elsevier, United States.
- Broberg, A., Jacobsson, K., Strom, K., & Schnurer, J. (2007). Metabolite profiles of lactic acid bacteria in grass silage. *Applied and Environmental Microbiology*, 73, 5547e5552.
- Carvalho, A.S., Silva, J., Ho, P., Teixeira, P., Malcata, F.X., Gibbs, P. 2004. Relevant Factors for the preparation of freeze-dried lactic acid bacteria. *Int Dairy J* 14:935-847
- Copetti, M. V., Beatriz, T., Lamanaka, J. C., Frisvad, J. L., Pereira, M. H., Tanwaki. 2011. *Mycobiota Cocoa: From farm to chocolate*. *Journal of Food Microbiology* 28(8), 1499-1504
- Crowley, S., Mahony, J., & Van Sinderen, D. 2013. Current perspectives on antifungal lactic acid bacteria as natural bio-preservatives. *Trends in Food Science and Technology*, 33(2), 93–109



- Dinev, T., Beev, G., Tzanova, M., Denev, S., Dermendzhieva, D. dan Stoyanova, A. 2017. Antimicrobial Activity of *Lactobacillus plantarum* Against Pathogenic and Food Spoilage Microorganisms : A Review. *Bulgarian Journal of Veterinary Medicine*.
- El-Nezami, H.S., A. Chrevatidis, S. Auriola, S. Salminen dan H. Mykkänen. (2002). Removal of common *Fusarium* toxins in vitro by strains of *Lactobacillus* and *Propionibacterium*. *Food Additives & Contaminants* 19 : 680–686.
- Eliasson, C. 2004. *Starch in Food : structure, function, and applications*.
- Erdiandini, I., Sunarti, T.C., Meryandini, A. 2014. Seleksi Bakteri Asam Laktat dan Pemanfaatannya Sebagai Starter Kering Menggunakan Matriks Tapioka Asam. *Jurnal Sumberdaya HAYATI* Vol.1 No.1: 26-33.
- Fardiaz, S. 1992. *Mikrobiologi Pangan*. PT. Gramedia Pustaka Utama. Jakarta.
- Frazier, W.Y. and Westhoff, D.C 1988. *Food Microbiology*. (4th Ed). Mc. Graw Hill Book Co, Singapore.
- Fugelsang, K. C. and C. G. Edwards. 2007. *Wine Microbiology: Practical Application and Procedures* 2nd Ed. Springer.
- Ghandi, A., Powell, I. B., Chen, X. D. and Adhikari, B. 2012. The effect of dryer inlet and outlet air temperatures and protectant solids on the survival of *Lactococcus lactis* during spray drying. *Drying Technology: An International Journal* 30:1649-1657.
- Gharsallaoui, A., Roudaut, G., Chambin, O., Voilley, A. and Saurel, R. 2007. Applications of spray-drying in microencapsulation of food ingredients: An overview. *Food Research International* 40:1107-1121.
- Gililand, S. E. 1985. *Bacterial Starter Cultures for Food*. CRC Press Inc., Florida
- Grace, M.R. 1977. *Cassava Processing*. Food and Agriculture Organization of United Nation, Roma.
- Hubeis M. 1984. *Pengantar Pengolahan Tepung Serealia dan Biji-bijian*. Bogor: Institut Pertanian Bogor
- Imanningsih N. 2012. Profil gelatinisasi beberapa formulasi tepung-tepungan untuk pendugaan sifat pemasakan. *Penel Gizi Makan*. 35(1): 13-22.
- Irena, Florencia. 2017. Pengaruh Penambahan Starter Kultur *Lactobacillus Plantarum* HL-15 Terhadap Pertumbuhan Jamur Selama Fermentasi Biji Kakao (*Theobroma Cacao Linn.*) di Unit Pengolahan Hasil Tani Ngudi Raharjo II Gunungkidul. *Skripsi*. Fakultas Teknologi Pertanian, Universitas Gadjah Mada, Yogyakarta.



- Juliana, R. 2007. Resistant Starch Tipe III dan Tipe IV Pati Singkong (*Manihot esculanta* Crantz), Suweg (*Amorphophallus campanulatus*), dan Ubi Jalar (*Ipomea batatas* L.) sebagai Prebiotik. Skripsi. Fakultas Teknologi Pertanian. Institut Pertanian Bogor, Bogor.
- Karisma, Vincentius L. K. 2017. Aplikasi Metode *Sun Drying* dan *Artificial Drying* pada Pengerinan Biji Kakao (*Theobroma Cacao* Linn) yang Difermentasi dengan Penambahan Inokulum *Lactobacillus plantarum* HL-15. Skripsi. Fakultas Teknologi Pertanian, Universitas Gadjah Mada, Yogyakarta.
- Karmawati, E., Z. Mahmud, M Syakir, S. J. Munarso, I. K. Ardana, dan Rubiyo. 2010. *Budidaya dan Pasca Panen Kakao*. Pusat Penelitian dan Pengembangan Perkebunan. Bogor.
- Khusna, R.N.B. 2016. Isolasi dan Identifikasi Bakteri Asam Laktat dari Biji Kakao Terfermentasi dan Potensinya Sebagai Antijamur. Skripsi. Fakultas Teknologi Pertanian, Universitas Gadjah Mada, Yogyakarta.
- Kishimoto, N., Sugihara, S., Mochida, K., & Fujita, T. (2005). In vitro antifungal and antiviral activities of gamma- and delta-lactone analogs utilized as food flavoring. *Biocontrol Science*, 10, 31e36
- Kuswanto K. R., dan Sudarmadji, S. 1988. *Proses-proses Mikrobiologi Pangan*. PAU Pangan dan Gizi Universitas Gadjah Mada. Yogyakarta. Pp 160.
- Lamadoken, I. P. 2017. Produksi Inokulum Kering Semprot *Lactobacillus plantarum* HL-15 untuk Fermentasi Biji Kakao. Skripsi. Fakultas Teknologi Pertanian, Universitas Gadjah Mada, Yogyakarta.
- Lapsiri, W. Bhandari, B. Wanchaitanawong, P. 2012. Viability of *Lactobacillus plantarum* TISTR 2075 in Different Protectants during Spray Drying and Storage. *Drying Technology* 30: 1407-1412, 2012.
- Lavermicocca, P., Valerio, F., Evidente, A., Lazzaroni, S., Corsetti, A., & Gobbetti, M. (2000). Purification and characterization of novel antifungal compounds from the sourdough *Lactobacillus plantarum* strain 21B. *Applied and Environmental Microbiology*, 66, 4084e4090.
- Lay, B. 1994. *Analisis Mikroba di Laboratorium*. Jakarta: PT Raja Grafindo Persada.
- Mai, N.T.T., Ho, T.L., Tran, N.T. 2014. Fermentation of Cocoa Bean with Addition of Lactic Acid Bacteria. *KHON KAEN AGR. J.* 42 SUPPL.4 : (2014).
- Marth E.H., and Steele, J. L. 2001. *Applied Dairy Microbiology*. New York : Marcel dekker, Inc.



- Medeiros FHV, S.J. Martins, T.D. Zucchi, I.S. Melo, L.R. Batista dan J.C. Machado. (2012). Biological Control of Mycotoxin producing Molds. *Cienc. Agrotec* 36 : 483-497.
- Menezes, A.G.T., Batista, N.N., Ramos, C.L., Silva, A.R.A., Efraim, P., Pinheiro, A.C.M., Schwan, R.F. 2016. Investigation of Chocolate Produced from Four Different Brazilian Varieties of Cocoa (*Theobroma cacao* L.) inoculated with *Saccharomyces cerevisiae*. *Food Research International* 81: 83-90.
- Mounjouenpou P., D. Gueule, A.F. Tachon, B. Guyot, P.R. Tondje dan J.P. Guiraud. (2008). *Filamentous Fungi Producing Ochratoxin A during Cocoa Processing in Cameroon*. *International Journal of Food Microbiology* 121 : 234-241.
- Ndagano, D., Lamoureux, T., Dortu, C., Vandermoten, S., & Thonart, P. (2011). Antifungal activity of 2 lactic acid bacteria of the *Weissella* genus isolated from food. *Journal of Food Science*, 76, 305e311
- Nigam P.S. and A. Singh. 2014. Cocoa and Coffee Fermentations. *Encyclopedia of Food Microbiology* 1 : 466-473.
- Nielsen, D. S., M. Crafacck, L. Jespersen dan M. Jakobsen. 2013. The Microbiology of Cocoa Fermentation. *Dalam: Watson, R., V.R Preedy, dan S. Zibadi. (ed.) Chocolate in Health and Nutrition*. Hal. 39-60. Humana Press. New York.
- Niku-Paavola, M. L., Laitila, A., Mattila-Sandholm, T., & Haikara, A. (1999). New types of antimicrobial compounds produced by *Lactobacillus plantarum*. *Journal of Applied Microbiology*, 86, 29e35.
- Nugroho, A.D., F.M.C.S. Setyabudi, B. Salleh dan E.S. Rahayu. (2013). Ochratoxigenic Black Aspergilli Isolated from Dried Agricultural Products in Yogyakarta, Indonesia. *Journal of Food Science and Engineering* 3 : 472-480.
- Oktaviani, Dini. 2004. Efektivitas Bakteriosin dari *Lactobacillus plantarum* terhadap Masa Simpan *Fillet* Nila Merah Pada Suhu Rendah. *Skripsi*. Universitas Padjajaran. Jatinangor. 62 hlm.
- Panesar, P. S., J. F. Kennedy, C. J. Knill and M. Kosseva. 2010. Production of L(+) Lactic Acid Using *Lactobacillus casei* from Whey. *Brazillian Archives of Biology and Technology*. 53: 219-226.
- Potts, M. 1994. Desiccation tolerance of prokaryotes. *Microbiol Rev* 58, 755-805
- Putri, W. D. R., T. Dewanti Widyaningsih dan D.W. Ningtyas. 2008. Produksi Bio Laktat Kering Kultur Campuran *Lactobacillus sp* dan *Saccharomyces cereviceae*. *Jurnal Teknologi Pertanian* 9(2): 138-149



- Purwandhani, Siti N., Rahayu, E. S., Suladra, Made. 2008. Efektivitas Suplementasi Agensia Probiotik *Lactobacillus acidophilus* SNP-2 pada Pembuatan Tape Ketan dan Brem
- Quinto, E. 2014. Probiotic Lactic Acid Bacteria : A Review. *Food and Nutrition Sciences*. 5, 1765 - 1775
- Rahayu, E. S. 2003. "Lactic Acid Bacteria in Fermented Foods of Indonesian Origin". *Agritech* 23(2):75-84
- Rapak, M. T. 2013. Kajian Penggunaan Isolat Lokal *Lactobacillus plantarum* Dad 13 Untuk Pembuatan Keju Probiotik. *Tesis*. S2 Biologi Universitas Gadjah Mada Yogyakarta.
- Robinson, R.K and Tamime, A. Y. 2000. *Yogurt Science and Technology*. Second edition. New York : CRC Press
- Ryan, L. A., Dal Bello, F., Arendt, E. K., & Koehler, P. (2009). Journal of Agricultural and Food Chemistry. *Journal of Agriculture and Food Chemistry*, 57, 9563e9568.
- Ryan, L. A., Zannini, E., Dal Bello, F., Pawlowska, A., Koehler, P., & Arendt, E. K. (2011). *Lactobacillus amylovorus* DSM 19280 as a novel food-grade antifungal agent for bakery products. *International Journal of Food Microbiology*, 146, 276e283.
- Sant'Ana, Anderson de Souza. 2014. Encyclopedia of Food Microbiology (Second Edition). *Reference Module in Food Science*.30–35
- Santivarangkna, C., Kulozik, U., Foerst, P. 2008. Inactivation Mechanism of Lactic Acid Starter Cultures Preserved by Drying Processes. *Journal of Applied Microbiology* 105: 1-13.
- Schnurer J. dan A.J. Magnusson. (2005). Antifungal Lactic Acid Bacteria as Biopreservatives. *Trends in Food Science and technology* 16 : 70-78.
- Schwan R.F and A.E Wheals. 2004. The Microbiology of Cocoa Fermentation and its Role in Chocolate Quality. *Critical Reviews in Food Science and Nutrition* 44 : 205-221
- Schwenninger S.M, L. Meile, C. Lacroix dan E.T.H. Zurich. (2011). *Antifungal Lactic Acid Bacteria and Propionibacteria for Food Biopreservation*. Woodhead Publishing Limited, Switzerland.
- Setiawan, E.E. 2017. Produksi Inokulum Kering Oven *Lactobacillus plantarum* HL-15 untuk Fermentasi Biji Kakao. Skripsi. Fakultas Teknologi Pertanian, Universitas Gadjah Mada, Yogyakarta.



- Sjogren, J., Magnusson, J., Broberg, A., Schnurer, J., & Kenne, L. (2003). Antifungal 3-hydroxy fatty acids from *Lactobacillus plantarum* MiLAB 14. *Applied and Environmental Microbiology*, 69, 7554e7557.
- Speck, M.L and J.A Koburger. 1962. Activation of dry starter cultures in milk. *Appl Environ. Microbiol.* 10(6):496-499
- Strom, K., Sjogren, J., Broberg, A., & Schnurer, J. (2002). *Lactobacillus plantarum* MiLAB 393 produces the antifungal cyclic dipeptides cyclo(L-Phe-L-Pro) and cyclo(L-Phe-trans-4-OH-L-Pro) and 3-phenyllactic acid. *Applied and Environmental Microbiology*, 68, 4322e4327.
- Supriyadi, D. 2012. Studi Pengaruh Rasio Amilosa-Amilopektin Dan Kadar Air Terhadap Kerenyahan Dan Kekerasan Model Produk Gorengan. Skripsi. Fakultas Teknologi Pertanian, Institut Pertanian Bogor, Bogor.
- Teixeira, P., Castro, H., and Kirby, R. 1995. Spray-drying as a method for preparing concentrated cultures of *Lactobacillus bulgaricus*. *J Appl Bacteriol* 78, 456-462
- Tyoso, B.S. 2017. Pengembangan Kefir Menggunakan Isolat Murni Bakteri Asam Laktat, Bakteri Asam Asetat, Dan Yeast Yang Diisolasi Dari Kefir Gedono. Skripsi. Fakultas Teknologi Pertanian, Universitas Gadjah Mada, Yogyakarta.
- Utami, T., Harmayani, E., dan Rahayu, E. S. 2016. Survival of *Lactobacillus plantarum* Dad 13 during Spray Drying and Its Application for Yoghurt Fermentation. *International Research Journal of Biological Sciences*, 5(2), 16–22.
- Velmourougane K., R. Bhat, T.N. Gopinandhan dan P. Panneerselvam. (2011). Management of *Aspergillus ochraceus* and ochratoxin A contamination in coffee during on-farm processing through commercial yeast inoculation. *Biol Control.* 57: 215–221.
- Wang YC, Yu RC, Chou CC. 2004. Viability of lactic acid bacteria and *Bifidobacteria* in fermented soymilk after drying, subsequent rehydration and storage. *Int J Food Microbiol* 92:209-217
- Wayudi, T., Pangabean, T.R., Pujiyanto. 2009. Panduan Lengkap Kakao Manajemen Agribisnis dari Hulu Hingga Hilir. Penebar Swadaya. Bogor
- Widya Dwi Rukmi, Elok Zubaidah, M. M. 1994. Production Of Mixed Dry Starter From Lactic Acid Bacteria. *Jurnal Teknologi Pertanian Universitas Brawijaya* 4(1), 56–69.
- Winarti, C., Sunarti, T.C., Mangunwidjaja, D., dan Richana, N. 2013. Potensi dan Aplikasi Pati Termodifikasi sebagai Bahan Aktif Bahan Matriks Enkapsulasi Bahan Bioaktif. *Bul Teknol Pasc Pert.* 9(2): 83-94.



UNIVERSITAS
GADJAH MADA

PRODUKSI INOKULUM KERING *Lactobacillus plantarum* HL-15 UNTUK FERMENTASI BIJI KAKAO
MUTIARA CAESYA PUSPITARUM, Prof. Dr. Ir. Endang S. Rahayu, M.S. ; Dr. Ir. Tri Marwati, M.Si
Universitas Gadjah Mada, 2018 | Diunduh dari <http://etd.repository.ugm.ac.id/>

Yang, E. J., Kim, Y. S., & Chang, H. C. (2011). Purification and characterization of antifungal delta-dodecalactone from *Lactobacillus plantarum* AF1 isolated from kimchi. *Journal of Food Protection*, 74, 651e657.