

DAFTAR PUTAKA

- Abang, M. Bt, Dayang. S., Zulkarnain B., A., Awang, Husaini B., Awang, A.S. (2015). Enzymatic retting of *Piper nigrum* L. using commercial Pectinase (Peelzyme). *Journal of Chemical and Pharmaceutical Sciences*. 8(2): 360–364.
- Abdelfattah, M. S., Mohammed, I. Y. E., Usama, W. H., Lamia, T. A. E., dan Mennat, A. G. E. (2016). Isolation and characterization of marine-derived actinomycetes with cytotoxic activity from the Red Sea coast. *Asian Pacific Journal of Tropical Biomedicine*. Elsevier B.V. 6(8): 651–657.
- Agadagba, S. K. (2014). Isolation of Actinomycetes from Soil. *Journal of Microbiology Research*. 4(3): 136–140
- Aghababaie, M., Khanahmadi, M., dan Beheshti, M. (2015). Developing a detailed kinetic model for the production of yogurt starter bacteria in single strain cultures. *Food and Bioproducts Processing*. Institution of Chemical Engineers. 94: 657–667.
- Albersheim, P., Neukom, H., dan Deuel, H. (1960). Splitting of pectic chain molecules in neutral solutions. *Archives of Biochemistry and Biophysics*. 90: 46-51
- Anandan, R., Dhanasekaran, D., dan Gopinath, P. M. (2016). An Introduction to Actinobacteria. *Basic and Biotechnological Application*. <http://dx.doi.org/10.5772/62329>.
- Amilia, K. R., Sari, S. L. A., dan Setyaningsih, R. (2017). Isolation and Screening of Pectinolytic Fungi from Orange (*Citrus nobilis* Tan.) and Banana (*Musa acuminata* L.) Fruit Peel Isolation and Screening of Pectinolytic Fungi from Orange (*Citrus nobilis* Tan.) and Banana (*Musa acuminata* L.) Fruit. *International Conference On Food Science and Engineering*. 193: 1-5 doi: 10.1088/1757-899X/193/1/012015.
- Anisa, S. K., Ashwini, S. dan Girish, K. (2013). Isolation and Screening of *Aspergillus* spp . for Pectinolytic Activity. *Electronic Journal of Biology*. 9(2): 37–41.

- Anonim. (2005). Lada. Penerbit Aksi Agraris Kanisius. Jakarta.
- Anonim. (2012). Peraturan Menteri Pertanian No. 55 Tahun 2012 Tentang Pedoman Penanganan Pascapanen Lada. http://perundangan.pertanian.go.id/admin/p_mentan/Permentan%205-2212%20PASCAPANEN%20LADA.pdf. [24 Maret 2018].
- Ashari, M. F., Ibrahim, M. D., dan Husaini, A. (2014). Accelerated Production of White Pepper Using Integrated Mechanical and Enzymatic Solutions in an Automated Machine. *Key Engineering Materials*. 572: 304–307.
- Banik, S. dan Ghosh, S. N. (2008). Pectinolytic activity of microorganisms in piling of jute. *Indian Journal of Fiber & Textile Research*. 33: 151–156.
- Beg, Q. K., Bhushan, B., Kapoor, M., dan Hoondal, GS. (2000). Production and characterization of thermostable xylanase and pectinase from *Streptomyces*, sp . QG-11-3. *Journal of Industrial Microbiology & Biotechnology*. 24: 396–402.
- Bibi, N., Ali, S., dan Tabassum, R. (2018). Isolation and Identification of Novel Indigenous Bacterial Strain As A Low Cost Pectinase Source. *Brazilian Archives of Biology and Technology an International Journal*. 61: 1–7.
- Brandt, M. J. (2014). Starter Cultures For Cereal Based Food. *Food Microbiology* (37): 41 – 43.
- Breed, R. S., Murray, E. G. D., dan Nathan, R. S. (1957). *Bergey's Manual of Determinative Bacteriology*. Seventh. Baltimore: The Williams & Wilkins Company.
- Bressani, A.P.P., Silvia, J.M., Suzana, R.E., Disney, R.D., dan Rosane, F.S. (2018). Characteristic of Fermented Coffee Inoculated with Yeast Starter Cultures Using Different Inoculation Methods. *Food Science and Technology*. 92: 212 – 219.
- Bruhlmann, F. Kwi, S. K., Wolfgang, Z., dan Armin, F. (1994). Pectinolytic Enzymes from Actinomycetes for the Degumming of Ramie Bast Fibers. *Applied and Environmental Microbiology*. 60(6): 2107–2112.
- Bullerman, L. B. (2003). Fungi in Food – An Overview in Spoilage/Fungi in Food. Elsevier Science Ltd. 5511–5522.

- Chamikara, P. (2016). Advanced Study on selected taxonomic groups of Bacteria and Archaea Actinomycetes. [Http://www.researchgate.net/publication/308900787](http://www.researchgate.net/publication/308900787). [4 Januari 2020].
- Chaudhary, H. S. (2013). Antibacterial activity of actinomycetes isolated from different soil samples of Sheopur (A city of central India). *Journal of Advanced Pharmaceutical Technology & Research*. 4(2): 118–123.
- Chithra, G., Mathew, S. M. dan Deepthi, C. (2011). Performance evaluation of a power operated decorticator for producing white pepper from black pepper. *Journal of Food Process Engineering*. 34(1): 1–10.
- De Pasquale, I. (2018). Use of autochthonous mesophilic lactic acid bacteria as starter cultures for making Pecorino Crotonese cheese: Effect on compositional, microbiological and biochemical attributes. *Food Research International*. 116: 1344–1356.
- Direktorat Jenderal Perkebunan. (2016). Statistik Perkebunan Indonesia **2015 – 2017** Lada. <http://ditjenbun.pertanian.go.id/?publikasi=buku-publikasi-statistik-2015-2017>. [24 Maret 2018].
- Ed-har, A. A., Rahayu, W., dan Gunawan, D. (2017). Isolasi dan Identifikasi Mikroba Tanah Pendegradasi Selulosa dan Pektin Dari Rhizofe *Aquilaria malaccensis*. *Buletin Tanah dan Lahan*. 1 (1): 58–64.
- Elfahdi, A. (2018). Perlakuan gelombang mikro pada lada putih (*Piper nigrum* L) varietas lampung daun lebar, jambi, dan merapin jumbo terhadap profil senyawa volatil, karakteristik, dan aktivitas antioksidan minyak atsiri. S2 Ilmu dan Teknologi Pangan. Fakultas Teknologi Pertanian. Universitas Gadjah Mada. Yogyakarta.
- El-nasser, N. H. A., El Sayed, M. E., Wafaa, GH. S., dan Gehad, H. E. (2018). Isolation and Screening of Pectinolytic Streptomyces Sp. From Soil Samples of Egypt. *Research Journal of Pharmaceutical, Biological and Chemical Sciences*. 9(744): 744–751.
- Feng, J. (2013). Screening and Identification of an Indigenous Bacterial Strain High Active for Fermentative Production of White Pepper (*Piper nigrum* L.). *Advance Materials Research*. 781: 1489–1494.

- Franciosa, I., Valentina, A., Paola, D., Kalliopi, R., dan Luca, C. (2018). Sausage Fermentation and Starter Cultures in The Era Of Molecular Biology Methods. *International Journal of Food Microbiology*. 279: 26 – 32.
- Gautam, A. K., dan Bhadauria, R. (2012). Characterization of *Aspergillus* species associated with commercially stored triphala powder. *African Journal of Biotechnology*, 11(104): 16814–16823.
- Gopinathan, K. M. dan Manilal, V. B. (2004). Pectinolytic decortication of pepper (*Piper nigrum* L.). *Journal of Food Science and Technology*. 41(1): 74–77.
- Gu, F., Lehe, T., Huasong, W., Yiming, F., dan Qinghuang, W. (2013). Analysis of the blackening of green pepper (*Piper nigrum* Linnaeus) berries. *Journal of Food Chemistry*. 138(2): 797–801.
- Hidayat, T. dan Risfaheri, (1994). Pengolahan lada putih secara mekanis dan analisis ekonominya. Makalah pada Simposium II Hasil Penelitian dan Pengembangan Tanaman Industri. Bogor, 21 – 23 Nopember 1994. 10 hlm.
- Hidayat, T., Nanan, N., dan Sri, U. (2009). Analisis Teknis dan Finansial Paket Teknologi Pengolahan Lada Putih (White Pepper) Semi Mekanis. *Bul. Littro*. 20 (1): 77–91.
- Hidayati, E. dan Bambang, F. S. (2010). Aktivitas Antibakteri yang Dihasilkan oleh *Bacillus lentus* *Bacillus lentus* yang Hidup Pada Landak Laut di Perairan Pantai Lombok Barat, Nusa Tenggara Barat. International Seminar of Indonesian Society for Microbiology and IUMS-IMS Outreach Program in Food Safety. Universitas Udayana. Denpasar. Bali.
- Hu, Q., Jiachao, Z., Chaunbiao, X., dan Sixin, L. (2017). The Dynamic Microbiota Profile During Pepper (*Piper nigrum* L.) Peeling by Solid-State Fermentation. *Current Microbiology*. Springer US. 74(6): 739–746.
- Indriati, N., Nandang, P., dan Radestya, T. (2010). Penggunaan *Dichloran Rose Bengal Chloramphenicol Agar* (DRBC) Sebagai Media Tumbuh Kapang Pada Produk Perikanan. *Jurnal Pascapanen dan Bioteknologi Kelautan dan Perikanan*. 5(2): 117–121.

International Pepper Community. (2015). IPC Standard Specifications for Black/ White Pepper (Whole and Ground) and Whole Dehydrated Green Pepper. http://www.ipcnet.org/index_n.php. [28 Agustus 2018].

Jagella, T. dan Grosch, W. (2002). Flavour and off-flavour compounds of black and white pepper (*Piper nigrum* L.). *European Food Research and Technology*. 209(1): 16-21.

Kumar, P. P., Preetam, R. J. P., Nimal, C. I. V. S., Sagaya, J. R., Murungan, N., Agastian, P., Arunachalam, C., dan Sulaiman, A. A. (2015). Screening of *Actinomycetes* For Enzyme and Antimicrobial Activities From The Soil Sediments of Northern Tamil Nadu, South India. *Journal of Biologically Active Products from Nature*. ISSN Print: 2231-1866. ISSN Online: 2231-1874.

Leroy, F. dan Vuyst, L. De. (2004). Lactic acid bacteria as functional starter cultures for the food fermentation industry. *Trends in Food Science & Technology*. 15: 67–78.

Liu, H., Fan, K. Z., Qing, H. W., Hua, S. W., dan Le, H. T. (2013). Studies on the chemical and flavor qualities of white pepper (*Piper nigrum* L.) derived from five new genotypes. *Eur Food Res Technol*. doi: 237: 245-251.

Manan, M. A., dan Colin, W. (2017). Design Aspect of Solid State Fermentation As Applied To Microbial Bioprocessing. *Journal of Applied Biotechnology & Bioengineering*. 4(1): 511 – 532.

Maria Bf, A., Arunam S. S., dan Anbumalarmathi, J. (2018). Isolation and characterization of actinomycetes from marine soil. *MOJ Biology and Medicine*. 3(6): 221–225.

Mathew, A.G., (1993). Green Pepper and White Pepper. International Pepper News Bulletin. International Pepper Community. 17(3) : 10-13

Mojsov, K. D. (2016). *Aspergillus* Enzymes for Food Industries, New and Future Development in Microbial Biotechnology and Bioengineering. Elsevier B.V. 215-222.

Mufarrikha, I., Anna, R., dan Sasangka, P. (2014). Optimasi kondisi Produksi Pektinase dari *Aspergillus niger*. *Kimia Student Journal*. 2(1): 393-399.

- Murad, H. A., dan Azzaz, H.H. (2011). Microbial Pectinase and Ruminant Nutrition. *Reasearch journal of Microbiology*. 6(3): 246–269.
- Noor, Z., M. Nur Cahyanto., Retno, I., dan Sardjono. (2017). Skrining *Lactobacillus plantarum* Penghasil Asam Laktat untuk Fermentasi Mocaf. *Agritech*. 37(4): 437 – 442.
- Nur, E., dan Susono, S. (1984). Ragi tapai bentuk bubuk. *Berita Biologi*. 2(9): 207–211.
- Nurdjanah, N. (2006). Perbaikan Mutu Lada Dalam Rangka Meningkatkan Daya Saing di Pasar Dunia. *Jurnal Perspektif*. 5(1): 18 – 25.
- Nurllah, I., dan Jaya, I. (2019). Pengaruh Perubahan Harga Lada Putih Terhadap Kesejahteraan Masyarakat di Kecamatan Jebus Kabupaten Bangka Barat. *Jurnal Pemikiran Masyarakat Ilmiah Berwawasan Agribisnis*. 5(2): 224 – 234.
- Pandey, A. (2003). Solid-state fermentation. *Biochemical engineering Journal*. 13: 81-84.
- Paulova, L., Petra, P., dan Tomas, B. (2013). Advanced Fermentation Processes. <https://www.researchgate.net/publication/259193501>. [4 januari 2020]
- Pedrolli, D.B., Alexandre C.M., Eleni G., and Eleonora C.C. (2009). Pectin and Pectinases: Production, Characterization and Industrial Application of Microbial Pectinolytic Enzymes. *The Open Biotechnology Journal*. 3: 9 -18.
- Pelczar, Michael J dan Chan, E. C S. (2008) . Dasar-Dasar Mikrobiologi. Jakarta: UI Press
- Praja, R. N., Aditya, Y., dan Wiyanto, H. (2018). Isolasi dan Identifikasi Jamur Pada Cangkang Telur Penyu Lekang (*Lepidochelys olivacea*) Gagal Menetas Di Pantai Boom Banyuwangi. *Jurnal Medik Veteriner*. 1(2): 11 – 15.
- Pruthi, J.S. (1979). Spices and Condiment, Chemistry, Microbiology and Technology. Academic Press, New York.

- Purseglove, J.W., E.G. Brown, C.L. Green, dan S.R.J. Robin. (1981). Spice. Vol.1 and 2. London and New York. Longmans Inc.
- Putri, A. L. O., dan Endang, K. (2018). Isolasi dan Identifikasi Bakteri Asam Laktat dari Pangan Fermentasi Berbasis Ikan (Inasua) yang Diperjualbelikan di Maluku-Indonesia. *Jurnal Biologi Tropika*. 1(2): 6 – 12.
- Putri, A. L., Lisdiyanti, P. and Kusmiati, M. (2018). Identifikasi aktinomisetes sedimen air tawar mamasa, Sulawesi barat dan aktivitasnya sebagai antibakteri dan pelarut fosfat. *Jurnal Bioteknologi dan Biosains Indonesia*. 5: 139–148.
- Raharjo, S.J. dan Retnowati, R. (2012). Yield increasing of patchouli oils of result steam distillation of patchouli leaf of dewaxing, fermentation, and drying process. *Journal Basic Science and Technology*. 1(3): 12-18
- Rai, Nitin, Seema Yadav, A.K. Verma, Lalit Tiwari, dan Rajeev Kr. Sharma. (2012). Quality Specifications on Piper nigrum L. - A Spice and Herbal Drug of Indian Commerce. *International Journal of Advanced Food Science and Technology*. 1 (1): 1-11.
- Ramos, O. S. (2011). Food-Grade Enzymes. Elsevier B.V. Portugal.
- Rao S. 1994. Mikrobiologi Tanah. UMM Press. Malang.
- Risfaheri. (2012). Diversifikasi produk lada (*Piper nigrum*) untuk peningkatan nilai tambah. *Buletin Teknologi Pascapanen Pertanian*. Balai Pengkajian Teknologi Pertanian Kepulauan Bangka Belitung.
- Rosnah, S. dan Chan, S. C. (2014). Enzymatic rettings of green pepper berries for white pepper production. *International Food Research Journal*. 21(1): 237–245.
- Rubiyanti. (2009). Metode Fermentasi Lada (*Piper nigrum* L.) Pengaruhnya terhadap Kemudahan Pengupasan dan Kualitas Lada Putih yang Dihasilkan. S2 Teknologi Hasil Perkebunan. Fakultas Teknologi Pertanian. Universitas Gadjah Mada. Yogyakarta.
- Rukmi, W. D., Elok, Z., dan Monika, M. (2012). Production Of Mixed Dry Starter From Lactic Acid Bacteria. *Jurnal. Tek. Pert.* 4(1): 56–69.

- Rusmin, S., dan Swan, D. K. (1974). Rice-Grown *Rhizopus oligosporus* Inoculum For Tempeh Fermentation. *Applied Microbiology*. 28(3): 347 – 350.
- Sabbathini, G. C., Sri, P., Wijanarka, dan Puspita, L. (2017). Isolasi dan Identifikasi Bakteri Genus *Sphingomonas* dari Daun Padi (*Oryza sativa*) di Area Persawahan Cibinong. *Jurnal Biologi*. 6(1): 59 – 64.
- Sandhya, R., dan Kurup, G. (2013). Screening and Isolation of Pectinase from Fruit and Vegetable Wastes and the Use of Orange Waste as a Substrate for Pectinase Production. *International Research Journal of Biological Sciences*. 2(9): 34–39.
- Sembiring, S. (2000). Analisis sifat Fisika Kimia Kulit Lada dan Air Perendaman Pada Pengolahan Lada Putih. Bogor: Laporan Penyelesaian DIP Bagpro Tanaman Rempah dan Obat. Departemen Pertanian.
- Sewell, G. W. F. (1959). Studies of Fungi in A Calluna-Heathland Soil II. By The Complementary Use of Several Isolation Methods. *Trans. Brit. mycol Soc*. 42(3): 354- 369.
- Speranza, B., Antonio, B., dan Maria, R. B. (2017). Starter Cultures In Food Production. Wiley-Blackwell. John Wiley & Sons. Ltd. Sussex.
- Standar Nasional Indonesia. (2013). Standar Nasional Indonesia 0004: 2013 Lada. <http://sispk.bsn.go.id/sni/DetailSNI/12264>. [24 Maret 2018].
- Steinhaus, M. dan Schieberle, P. (2005^a). Characterization of odorants causing an atypical aroma in white pepper powder (*Piper nigrum* L.) based on quantitative measurements and orthonasal breakthrough thresholds. *Journal of Agricultural and Food Chemistry*. 53(15): 6049–6055.
- Steinhaus, M. dan Schieberle, P. (2005^b). Role of the fermentation process in off-odorant formation in white pepper: On-site trial in Thailand. *Journal of Agricultural and Food Chemistry*. 53(15): 6056–6060.
- Susilowati, D. N., Ratih, D. H., dan Erni, Y. (2007). Isolasi dan Karakteristik Aktinomisetes Penghasil Antibakteri Enteropatogen *Escherichia coli* K1.1, *Pseudomonas pseudomallei* 02 05, dan *Listeria monocytogenes* 5407. *Jurnal AgroBiogen*. 3(1): 15-23.

- Sutarno dan Agus A. (2005). *Budidaya Lada si Raja Rempah-Rempah*. PT. Agro Media Pustaka. Jakarta.
- Syakir, M., Tatang, H., dan Ria, M. (2017). Karakteristik Mutu Lada Putih Butiran Dan Bubuk Yang Dihasilkan Melalui Pengolahan Semi Mekanis Di Tingkat Petani. *Jurnal Penelitian Pascapanen Pertanian*. 14(3): 134–143.
- Thankamani, V. L. dan Giridhar, R. N. (2004). Fermentative production of white pepper using indigenous bacterial isolates. *Biotechnology and Bioprocess Engineering*. 9(6): 435–439.
- Tomassini, A., Sella, L., Raiola, A., D'Ovidio, R., dan Favaron, F. (2009). Characterization and expression of *Fusarium graminearum* endopolygalacturonases in vitro and during wheat infection. *Plant Pathol*. 58: 556-564.
- Usmiati, S. and Nanan, N. (2006). Pengaruh Lama Perendaman dan cara Pengeringan Terhadap Mutu Lada Putih. *Balai Besar Penelitian dan Pengembangan Pascapanen Pertanian*.
- Utami, P. (2017). Isolasi dan Identifikasi Bakteri Probiotik Dari Organ Pencernaan Ikan Patiin (*Pangasius hypophthalmus*). Program Studi Pendidikan Biologi. Fakultas Keguruan dan Ilmu Pendidikan. Universitas Muhammadiyah Purwokerto. Purwokerto.
- Vinod, V., Kumar, A. dan Zachariah, T.J. (2013). Purification and characterization of polygalacturonase from *Bacillus licheniformis* MTCC 5408-An industrially important bacterium for white pepper production. *Int J Appl Biotechnol Biochem*. 3: 25–36.
- Vinod, V., Kumar, A. dan Zachariah, T. J. (2014). Isolation, characterization and identification of pericarp-degrading bacteria for the production of off-odour-free white pepper from fresh berries of *Piper nigrum* L. *Journal of Applied Microbiology*. 116(4): 890–902.
- Watanabe, T. (2002). *Pictorial Atlas of Soil and Seed Fungi : Morphologies of Cultured Fungi and Key to Species*. CRC Press LLC. Florida.

- Wijayanti, B. (2003). Penggunaan *Serratia mercescens* DS8 untuk Pengendalian Penyakit Busuk Batang Panili. Jurusan Biologi. Fakultas matematika dan Ilmu Pengetahuan Alam. Institut Pertanian Bogor. Bogor.
- Winarno. (1984). Kimia Pangan dan Gizi. Penerbit PT. Gramedia: Jakarta.
- Winarti, C., dan Nanan, N. (2007). Pedoman Pengolahan Lada Putih dan Hitam. Balai Besar Penelitian dan Pengembangan Pascapanen Pertanian. Badan Penelitian dan Pengembangan Pertanian Departemen Pertanian.
- Wuryanti. (2008). Pengaruh Penambahan Biotin pada Media Pertumbuhan Terhadap Produksi Sel *Aspergillus niger*. *BIOMA*. 10(2): 46 – 50.
- Yuanyuan, H., Liu, S., dan Li, C. (2012). Activity Changes of Several Enzymes during Pepper (*Piper nigrum* L.) Decortication by Fermentation Using *Bacillus subtilis* CICC10076 and Natural Water Retting. *Advanced Materials Research*. 393–395: 567–571.
- Yousef, A. E., dan Carolyn, C. (2003). Food Microbiology A Laboratory Manual. John Wiley & Sons, Inc. Hoboken. New Jersey.
- Zhang, J., Qisong, H., Chuanbiao, X., Sixin, L., dan Congfa, L. (2016). Key microbiota identification using functional gene analysis during pepper (*Piper nigrum* L.) peeling. *PLoS ONE*. 11(10): 1–12.
- Zhang, R., Jiancheng, F., Zhihao, D., Hui, X., dan Ai, H. (2015). Optimization of the conditions for pepper soaking peeling by enzymatic method. *Biochemistry an Indian Journal*. 9(6): 244–251.