



DAFTAR PUSTAKA

- Adav, S. S., R. S. Subbaiah, S.k. Kerk, A. Y. Lee, H. Y. Lai, K. W. Ng, S. K. Sze, dan A. Schmidtchen. 2018. Studies on the Proteome of Human Hair - Identification of Histones and Deamidated Keratins. Journal of scientific Report. 8:1-15.
- Adnan M. 1997. Teknik Kromatografi dalam Analisis Bahan Pangan. Yogyakarta: Andi Yogyakarta. Alamatsier Y. 2006. Prinsip Dasar Ilmu dan Gizi. Cetakan keenam. Jakarta: Gramedia.
- Agrahari, S., dan N. Wadhwa. 2010. Degradation of chicken feather a poultry waste product by keratinolytic bacteria isolated from dumping site at Ghazipur poultry processing plant. International Journal of Poultry Science 9 (5) : 482 – 489.
- Alamatsier Y. 2006. Prinsip Dasar Ilmu dan Gizi. Cetakan keenam. Jakarta: Gramedia.
- Arwiyanto T, Asfanudin R, Wibowo A, Martoredjo T, Dalmadiyo G. 2007. Penggunaan *Bacillus* isolat lokal untuk menekan penyakit lincat tembakau Temanggung. Berkala Penelitian Hayati 13: 79-84.
- Badan Pusat Statistik. 2020. Populasi itik menurut provinsi(ekor) 2018-2020.
- Barman, N. C., F. T. Zohora, K. C. Das, Md. G. Mowla, N . A. Banu, Md. Salimulah, dan A. Hashem. 2017. Production, partial optimization and characterization of keratinase enzyme by *Arthrobacter* sp. NFH5 isolated from soil samples. AMB Express 7 : 181.
- Bergmeyer, H.V. dan Grassl, (1983), Method of Enzymatic Analysis 2. Verlag Chemia, Weinhein.
- Brandelli, A., 2008. Bacterial Keratinases: Useful Enzymes for Bioprocessing Agroindustrial Wastes and Beyond. *Food Bioprocess Technol*, 1:105-116.
- Cai, C. and X. Zheng. 2009. Medium optimization for keratinase production in hair substrate by a new *Bacillus* subtilis KD-N2 using response surface methodology. J. Ind. Microbiol. Biotechnol. 36: 875-883.
- Fitriasari P. D., N. Amalia, dan S. Farkhiyah. 2020. Isolasi dan uji kompatibilitas bakteri hidrolitik dari tanah tempat pemrosesan akhir talangagung, kabupaten malang. Jurnal ilmu-ilmu hayati. 19(2): 151-156.
- Fitriyanto, N. A., S. Hadi, M. I. Bachtiar, R. A. Prasetyo, and Y. Erwanto. 2020. Characterization and growth profile of proteolytic strain PK-4 isolated from local slaughterhouse wastewater. BioMIC. 1-4.
- Fitriyanto, N. A., V. Oktaria, Y. Erwanto, Rusman, T. Hayakawa, T. Nakagawa, dan K. Kawai. 2014. Isolation and characterization of protease producing strain *Bacillus cereus* from odorous farm soil in Tropical Area. Prosding sustainable livestock production in the



prospective of food security, policy, genetic seource, and climate change. Vol 2 (16): 1308-1311.

Godbole, S., J. Pattan., S. Gaikwad and T. Jha. 2017. Isolation, Identification and Characterization of Keratin degrading microorganisms from Poultry soil and their Feather degradation Potential. International Journal of Environment, Agriculture and Biotechnology (IJEAB). Vol 2: 2060-2068.

Gupta, R., and Ramnani, P. (2006). Microbial keratinases and their prospective applications: an overview. Appl. Microbiol. Biotechnol. 70:21

Gupta, R., dan P. Ramnani. 2006. Microbial keratinases and their prospective applications: an overview. 70: 21-33.

Hamiche, S., S. Mechri, L. Khelouia, R. Annane, M. E. Hattab, A. Badis, dan B. Jaouadi. 2019. Purification and biochemical characterization of two keratinases from *Bacillus amyloliquefaciens* S13 isolated from marine brown alga *Zonaria tournefortii* with potential keratin-biodegradation and hideunhairing activies. Journal of biological macromolecules. 122: 758-769.

Hidayat, T. 2011. Profil Asam Amino Kerang Bulu (Anadara Antiquata). Skripsi Fakultas Perikanan Dan Ilmu Kelautan. IPB. Bogor.

Jain, R., A. Jain, N. Rawat, M. Nair, dan R. Gumastha. 2016. Feather hydrolysate from *Streptomyces sampsonii* GS 1322: A potential low cost soil amendment. Journal of Bioscience and Bioengineering. 121(6): 672-677.

Junaidi, Y., A. Pertiwiningrum, L. M. Yusiat, Jamhari, dan N. A. Fitriyanto. 2016. Purification and characterization of alkaline protease enzyme from *Bacillus cereus* LS2B. 1 International Conference on Tropical Agriculture (ICTA).

Kainoor, S.P., and G. R. Naik. 2010. Production and charaterization of feather degradation keratinase from bacillus sp. JB 99. Departement of Biotechnology, Gurbage University Journal Of Biotechnology. 9: 384-390.

Kim, W. K and P. H. Patterson. 2000. Nutritional value of enzyme or sodium hydroxide-treated feathers from dead hens. Journal Poultry Science. Vol 79: 528-534.

Kunert, J. 2000. Physiology of Kerantinophilic Fungi. Revisa Iberoamericana Micrologia. Bilbao. 66-85.

Kusmiadi, R., Khodijah N.S, dan A.A Enviagro. 2014. Pemanfaatan bulu ayam dan komposisi cangkang rajungan untuk meningkatkan kualitas fisik dan kimia kompos. Jurnal Lahan Suboptimal. Vol 5(2): 145-152.

Larasati, D. 2015. Modifikasi Enzimatik Limbah Bulu Ayam Sebagai Pakan Ternak Kaya Nutrisi. Skripsi. Fakultas Matematika Dan Ilmu Pengetahuan Alam. ITS. Surabaya.

Lehninger AL. 2004. Dasar-Dasar Biokimia. Jakarta: Erlangga.



- Li, Q. 2019. Progress in microbial degradation of feather waste. *Frontiers in microbiology*. Vol 10(2717) : 1-25.
- Li, X., Z. Guo, J. Li, M. Yang, dan S. Yao. 2021. Swelling and microwave-assisted hydrolysis of animal keratin in ionic liquids. *Journal of Molecular Liquids*. 341: 1-15.
- Li, X., Z. Guo, J. Li, M. Yang, S. Yao. 2021. Swelling and microwave-assisted hydrolysis of animal keratin in ionic liquids. *Journal of Molecular Liquids*. 341: 1-15.
- Lin, X, Shih JCH, Swaisgood HE. 1995. Hydrolysis of feather keratin by immobilized keratinase. *Appl Environ Microbiol*. Vol 62(11):4273-4275.
- Lin, X., Lee, C.G., Casale, E.S., Shih, J.C.H., 1992. Purification and characterization of a keratinase from feather degrading *Bacillus licheniformis* strain. *Appl. Environ. Microbiol.* 58, 3271–3275.
- Mazotto, A.M., Coelho, R.R., Cedrola, S.M., De Lima, M.F., Couri, S., de Paraguai, S.E., dan Vermelho, A.B., 2011. Keratinase Production by Three *Bacillus* sp. Using Feather Meal and Whole Feather as Substrate in a Submerged Fermentation. Research Article, *Enzyme Research*. Rio de Janeiro.
- Mazzoto, A.M., A.C. Nattiasson, A. Melmahdy, J.D. Liang, Z.Z. Lee and D.C. Vandresen. 2010. Biodegradation of feather waste by extracellular keratinases and gelatinases from *Bacillus* spp. *World Journal Microbiology Biotechnology*. Departamento de Microbiologia Geral. Instituto de Microbiologia Paulo de Góes. Rio de Janeiro, Brazil. Vol 27. p 1355-1365.
- Mulia, D. S., R. T. Yuliningsih, H. Maryanto, dan C. Purbomartono. 2016. Pemanfaatan limbah bulu ayam menjadi bahan pakan ikan dengan fermentasi *Bacillus subtilis*. *Jurnal Manusia dan Lingkungan*. 23(1): 49-57.
- Muloiwa, M., S. N. Byakika, dan M. Dinka. 2020. Comparison of unstructured kinetic bacterial growth models. *Journal of Chemical Engineering*. 1: 1-34.
- Murwani, s. 2015. Dasar-dasar mikrobiologi veteriner. Ub press. Malang.
- Nurwijayanti, D., U. B. L. Utami, dan D. Umaningrum. Penentuan phoptimum adsorpsi kromium menggunakan adsorben bulu itiktermodifikasi CH OH dan HCL. *Jurnal sains dan terapan kimia*. 12(1): 1-10.
- Pelczar, M. J, dan Chan, E. C. S. 2010. Dasar-dasar mikrobiologi 1. UI Press. Jakarta.
- Peng, Z., X. Mao, J. Zhang, G. Du, dan J. Chen. 2019. Effective biodegradation of chicken feather waste by co-cultivation of keratinase producing strains. *Microbial Cell Factories*. 18(84): 1-11.
- Peng, Z., X. Mao, J. Zuang, G. Du, dan J. Chen. 2019. Effective biodegradation of chicken feather waste by co-cultivation of keratinase producing strains. *Microbial Cell Factories*. 1:1-11.



- Periasamy, A.H., dan Subash, C.B.G., 2004. *Keratinophilic Fungi of Poultry Fram and Father Dumping Soil In Tamil Nadu*. University of Madras. Madras.
- Qiu, J., C. Wilkens, K. Barrett, and A. S. Meyer. 2020. Microbial enzymes catalyzing keratin degradation : classification, structure, function. Journal Biotechnology advance. 44(1): 1-22.
- Radiati, L. E., R. D. Andriani, M. W. Apriliyani, dan P. P. Rahayu. 2019. Mikrobiologi Dasar Hasil Ternak. UB Press. Malang.
- Ramnani, P. dan R. Gupta. 2007. Keratinase vis-a-vis conventional proteases and feather degradation. World Journal Microbiol iotechnol 23 : 1537 – 1540.
- Ramos., P. ME, H.Melchor DJ, C.Pérez B dan Q. Cruz M. 2017. Degradation of Chicken Feathers. Journal An Indian . Vol 13 (6): 1-25.
- Riskawati. 2016. Isolasi Dan Karakterisasi Bakteri Patogen Pada Tanah Dilingkungan Tempat Pembuangan Akhir Sampah Kota Makasar. Skripsi Fakultas Sains Dan Teknologi . UIN Alauddin. Makasar.
- Rismiyati. 2021. Biodegradasi Keratin Dari Bulu Unggas Menggunakan Enzim Keratinase Hasil Dari Isolat *Pseudomonas* sp.Pk4. Skripsi Fakultas Peternakan. UGM. Yogyakarta.
- Rodriguez, M.R., Valdivia, E., Soler, J.J. Vivaldi, M.M., Martin-Platero, A.M., dan MartinezBueno, M., 2009. Symbiotic Bacteria Living in the Hoopoe's Uropygial Gland Prevent Feather Degradation. J. Exp. Biol, 212:3621- 3626.
- Said, M. I., F. N. Yuliati dan M. Sukma. 2019. The effect of acidic and alkaline hydrolysis process on some physical and chemical properties of broiler chicken feathers. Iranian Journal of Applied Animal Science. Vol 9 (3): 529-540.
- Sari, E. P., I. S. F. Putri., R. A. Putri., S. Imande., D. Elfidasari., dan R. L. Puspitasari. 2015. Pemanfaatan limbah bulu ayam sebagai pakan ternak ruminansia. Prosiding Seminar Nasional Masyarakat Biodiversity Indonesia. Vol 1(1) : 136-138.
- Savitha, G. Joshi, M.M., Tejashwini, N., Revati, R., Sridevi, S., dan Roma, D., 2007. Isolation, Identification and Characterization of a Feather Degrading Bacterium. International Journal of Poultry Science, 6(9): 689-693.
- Schlegel, H. G. 1994. Mikrobiologi Umum. Ugm press. Yogyakarta.
- Shabaan, M. T., M. Attia, S. M. El-Sabagh, dan A. A. M. Ahmed. 2014. Isolation, screening, and selection of efficient feather degrading bacteria. Current Science International 3(4) : 488 – 498.
- Sinoy, Tom E.S, Bhausaheb, Chavaan Pooja and Pratiksha, Patre Rajendra. 2011. Isolation and Identification of Feather Degradable Microorganism. VS RD TNTJ 2:128-136.



- Sitompul S. 2004. Analisis asam amino dalam tepung ikan dan bungkil kedelai. Buletin Teknik Pertanian 9(1):33-37.
- Su, C., J. S. Gong a, J. Qin, H. Li, H. Li, Z. H. Xu, J. S. Shi, 2020. The tale of a versatile enzyme: Molecular insights into keratinase for its industrial dissemination. Journal Biotechnology Advance. 45: 1-18.
- Su, C., J. S. Gong, J. Qin, H.Li, H.Li, Z. H. Xu, dan J. S. Shi. 2020. The tale of a versalite enzyme: Molecular insights into keratinase for its industrial dissemination. Journal Biotechnology Advances. 1-20.
- Suhandana, M., G. Pratama, Jumsurizal, R. M. S. Putri, dan R. D. Septyaningtyas. 2018. Komposisi kimia hidrolisat protein jeroan ikan dengan konsep autolisis menggunakan enzim internal pada ikan. Jurnal teknologi hasil perikanan. 7(2): 124-130.
- Suhardjono. 2010. Pemberdayaan komunitas *Pseudomonas* untuk bioremidiasi ekosistem air sungai tercemar limbah deterjen. Seminar nasional biologi.
- Sumarlin, L. O. 2008. Aktivitas Protease Dari *Bacillus circulans* Pada Media Pertumbuhan Dengan pH Tidak Terkontrol. Jurnal Kimia Valensi. 1 : 1-5.
- Suntornsuk, W., Tongjun, J., Onnim, P., Oyama, H., Ratanakanokchai, K., Kusamran, T., dan Oda, K., 2005. Purification and Characterisation of Keratinase from A Thermotolerant Feather Degrading Bacterium. World Jurnal of Microbiology & Biotechnology. 21:1111-1117.
- Tesfaye, T., Sithole, B., and Ramjugernath, D. (2017). Valorisation of chicken feathers: a review on recycling and recovery route—current status and future prospects. Clean Technol. Environ. Policy 19, 2363–2378.
- Waluyo, L. 2009. Mikrobiologi Lingkungan. UMM Press. Malang.
- Waluyo, L., 2004. Mikrobiologi Umum. UMM press. Malang.
- Wang, B., Yang, W., McKittrick, J., and Meyers, M. A. (2016). Keratin: structure, mechanical properties, occurrence in biological organisms, and efforts at bioinspiration. Prog. Mater. Sci. 76, 229–318.
- Winarno FG. 2008. Kimia pangan dan Gizi. Jakarta: PT. Gramedia.
- Zultiniar, drastinawati, dan khairat. 2013. Analisa asam amino dari bulu ayam dengan metode HPLC. Jurnal Teknlogi. 4(1): 1-5.