

DAFTAR PUSTAKA

- Abada, E. A. (2014). Production and purification of lipase from *Pseudomonas* sp. AB2 with potential application in biodiesel production. *Journal of Pure and Applied Microbiology*, 8(SPEC. ISS. 1), 133–142.
- Abbasi, H., Sharafi, H., Alidost, L., Bodagh, A., Zahiri, H. S., & Noghabi, K. A. (2013). Response Surface Optimization of Biosurfactant Produced by *Pseudomonas aeruginosa* MA01 Isolated from Spoiled Apples. *Prep Biochemistry Biotechnology*, 43(4), 398–414. <https://doi.org/10.1080/10826068.2012.747966>
- Adela, N., Muzzamil, N., Loh, S. K., & Choo, Y. M. (2014). Characteristics of Palm Oil Mill Effluent (POME) in an Anaerobic Biogas Digester. *Asian Journal of Microbiology, Biotechnology & Environmental Sciences*, 16(1), 225–231.
- Agilent, T. (2012). GC and GC.MS : Your Essential Resource for Columns & Supplie. *Agilent Techonologies Press*, 318–319.
- Al-kashef, A. S., Nooman, M. U., Rashad, M. M., Hashem, A. H., & Abdelraof, M. (2023). Production and optimization of novel Sphorolipids from *Candida parapsilosis* grown on potato peel and frying oil wastes and their adverse effect on Mucorales fungal strains. *Microbial Cell Factories*, 22(1), 1–16. <https://doi.org/10.1186/s12934-023-02088-0>
- Al-Wahaibi, Y., Joshi, S., Al-Bahry, S., Elshafie, A., Al-Bemani, A., & Shibulal, B. (2014). Biosurfactant production by *Bacillus subtilis* B30 and its application in enhancing oil recovery. *Colloids and Surfaces B: Biointerfaces.*, 114, 324–333. <https://doi.org/10.1016/j.colsurfb.2013.09.022>
- Amani, H., Mehrnia, M. R., & Soudi, M. R. (2010). Scale up and application of biosurfactant from *Bacillus subtilis* in enhanced oil recovery. *Applied Biochemistry and Biotechnology*, 162, 510–523. <https://doi.org/10.1007/s12010-009-8889-0>
- Ariech, M., & Guechi, A. (2015). Assessment of four different methods for selecting biosurfactant producing extremely halophilic bacteria. *African Journal of Biotechnology*, 14(21), 1764–1772. <https://doi.org/10.5897/ajb2015.14611>
- Asha, S. (2014). Dimethyl Sulfate. In *Encyclopedia of Toxicology* (3rd ed., pp. 162–165). Elsevier Ltd. <https://doi.org/10.1016/B978-0-12-386454-3.01219-7>
- Bulbul, B., & Minti, G. (2013). Plant based natural surfactants. *Asian Journal of Home Science*, 8(2), 759–762.
- Chandran, P., & Das, N. (2011). Characterization of sophorolipid biosurfactant produced by yeast species grown on diesel oil. *Int. J. Sci. Nat*, 2, 63–71.

- Chen, C. Y., Baker, S. C., & Darton, R. C. (2007). The application of a high throughput analysis method for the screening of potential biosurfactants from natural sources. *Journal of Microbiological Methods*, 70(3), 503–510.
- Cheng, J., Zhu, X., Ni, J., & Borthwick, A. (2010). Palm oil mill effluent treatment using a two-stage microbial fuel cells system integrated with immobilized biological aerated filters. *Bioresource Technology*, 101(8), 27292734. <https://doi.org/10.1016/j.biortech.2009.12.017>
- Chibuzor Oporum, C., Nwaneri, C., Nwanyanwu, C. E., B, N. C., & Iac, M. (2017). *Biosurfactant Production by Pseudomonas species using Pre-treated Palm Oil Mill Effluent as Fermentation Medium Waste management View project Microbial quality control View project Futo Journal Series (FUTOJNLS) e-Biosurfactant Production by Pseudomonas s. 2*, 149–160. www.futojnls.org
- Chooklin, C. S., Phertmean, S., Cheirsilp, B., Maneerat, S., & Saimmai, A. (2013). Utilization of palm oil mill effluent as a novel and promising substrate for biosurfactant production by *Nevskia ramosa* NA3. *Songklanakarinn Journal of Science and Technology*, 35(2), 167–176.
- De Almeida, D. G., Soares Da Silva, R. de C. F., Luna, J. M., Rufino, R. D., Santos, V. A., Banat, I. M., & Sarubbo, L. A. (2016). Biosurfactants: Promising molecules for petroleum biotechnology advances. *Frontiers in Microbiology*, 7(OCT), 1–14. <https://doi.org/10.3389/fmicb.2016.01718>
- De, S., Malik, S., Ghosh, A., Saha, R., & Saha, B. (2015). A review on natural surfactants. *RSC Advances*, 5(81), 65757–65767. <https://doi.org/10.1039/C5RA11101C>
- Deb, N., Alam, M. Z., Al-Khatib, M. F. R., & Elgharbawy, A. (2019). Development of Acid-Base-Enzyme Pretreatment and Hydrolysis of Palm Oil Mill Effluent for Bioethanol Production. In L. K. Singh & G. Chaudhary (Eds.), *Liquid Biofuel Production* (pp. 197–217). Wiley Online Library. <https://doi.org/10.1002/9781119459866.ch6>
- Derguine-Mecheri, L., Kebbouche-Gana, S., Khemili-Talbi, S., & Djenane, D. (2018). Screening and biosurfactant/bioemulsifier production from a high-salt-tolerant halophilic *Cryptococcus* strain YLF isolated from crude oil. *Journal of Petroleum Science and Engineering*, 162(July 2017), 712–724. <https://doi.org/10.1016/j.petrol.2017.10.088>
- Fardami, A. Y., Kawo, A. H., Yahaya, S., Lawal, I., Abubakar, A. S., & Maiyadi, K. A. (2022). A Review on Biosurfactant Properties, Production and Producing Microorganisms. *Journal of Biochemistry, Microbiology and Biotechnology*, 10(1), 5–12. <https://doi.org/10.54987/jobimb.v10i1.656>
- Fazli, R. R., Hanum, L., Alvionita, M., & Akbar, S. A. (2022). Variasi Sumber

Karbon terhaap Produksi Biosurfaktan oleh Bakteri Halofilik Isolat Tambak Garam Kajhu Aceh Besar. *Lantanida Journal*, 10(1), 1–85.

Felse, P. A., & Panda, T. (1999). Self-directing optimization of parameters for extracellular chitinase production by *Trichoderma harzianum* in batch mode. *Process Biochemistry*, 34(6–7), 563–566. [https://doi.org/10.1016/S0032-9592\(98\)00128-9](https://doi.org/10.1016/S0032-9592(98)00128-9)

Fracchia, L., Cavallo, M., Giovanna, M., & M., I. (2012). Biosurfactants and Bioemulsifiers Biomedical and Related Applications – Present Status and Future Potentials. *Biomedical Science, Engineering and Technology, January*. <https://doi.org/10.5772/23821>

Fracchia, L., Ceresa, C., Franzetti, A., & Hamme, J. D. Van. (2014). Biological Applications of Biosurfactants and Strategies to Potentiate Commercial Production. *Biosurfactants*, November, 280–305. <https://doi.org/10.1201/b17599-15>

Fusconi, R., Maria Nascimento Assunção, R., de Moura Guimarães, R., Rodrigues Filho, G., & Eduardo da Hora Machado, A. (2010). Exopolysaccharide produced by *Gordonia polyisoprenivorans* CCT 7137 in GYM commercial medium and sugarcane molasses alternative medium: FT-IR study and emulsifying activity. *Carbohydrate Polymers*, 79(2), 403–408. <https://doi.org/10.1016/j.carbpol.2009.08.023>

Gaur, V. K., Sharma, P., Sirahi, R., Varjani, S., Taherzadeh, M. J., Chang, J. S., Ng, H. Y., Wong, J. W. C., & Kim, S. H. (2022). Production of biosurfactants from agro-industrial waste and waste cooking oil in a circular bioeconomy: An overview. *Bioresource Technology*, 343. <https://doi.org/10.1016/j.biortech.2021.126059>

Gayathiri, E., Prakash, P., Karmegam, N., Varjani, S., Awasthi, M. K., & Ravindran, B. (2022). Biosurfactants: Potential and Eco-Friendly Material for Sustainable Agriculture and Environmental Safety—A Review. *Agronomy*, 12(3), 1–35. <https://doi.org/10.3390/agronomy12030662>

Ghazi Faisal, Z., Sallal Mahdi, M., & Alobaidi, K. H. (2023). Optimization and Chemical Characterization of Biosurfactant Produced from a Novel *Pseudomonas guguanensis* Strain Iraqi ZG.K.M. *International Journal of Microbiology*, 2023. <https://doi.org/10.1155/2023/1571991>

Gurkok, S. (2021). Important parameters necessary in the bioreactor for the mass production of biosurfactants. In *Green Sustainable Process for Chemical and Environmental Engineering Science* (pp. 347–365). Elsevier Ltd. <https://doi.org/10.1016/B978-0-12-823380-1.00020-4>

Gürkök, S., & Özdal, M. (2021). *Microbial Biosurfactants : Properties , Types ,*

and Production 2 . Types of Biosurfactants Factors Production Affecting Biosurfactant. 7–12.

- Hermansyah, H., Maresya, A., Putri, D. N., Sahlan, M., & Meyer, M. (2018). Production of Dry Extract Lipase from *Pseudomonas aeruginosa* by the Submerged Fermentation Method in Palm Oil Mill Effluent. *International Journal of Technology*, 2, 325–334. <https://doi.org/10.14716/ijtech.v9i2.15.11>
- Hope, N., & Gideon, A. (2015). Biosurfactant production from Palm Oil Mill Effluent (POME) for applications as oil field chemical in Nigeria. *SPE Nigeria Annual International Conference and Exhibition*. <https://doi.org/10.2118/178315-MS>
- Invally, K., Sancheti, A., & Ju, L. K. (2019). A new approach for downstream purification of rhamnolipid biosurfactants. *Food and Bioproducts Processing*, 114, 112–131. <https://doi.org/10.1016/j.fbp.2018.12.003>
- Iskandar, M. J., Baharum, A., Anuar, F. H., & Othaman, R. (2018). Palm oil industry in South East Asia and the effluent treatment technology—A review. *Environmental Technology & Innovation*, 9, 169–185. <https://doi.org/10.1016/j.eti.2017.11.003>
- Izah, S. C., & Ohimain, E. I. (2016). Review Microbiological quality of palm oil used in Nigeria: Health impacts perspective. *Point Journal of Botany and Microbiology Research*, 2(1), 37–45.
- Jahan, R., Bodratti, A. M., Tsianou, M., & Alexandridis, P. (2020). Biosurfactants, natural alternatives to synthetic surfactants: Physicochemical properties and applications. *Advances in Colloid and Interface Science*, 275. <https://doi.org/10.1016/j.cis.2019.102061>
- Karlapudi, A. P., Venkateswarulu, T. C., Tammineedi, J., Kanumuri, L., Ravuru, B. K., Dirisala, V. ramu, & Kodali, V. P. (2018). Role of biosurfactants in bioremediation of oil pollution-a review. *Petroleum*, 4(3), 241–249. <https://doi.org/10.1016/j.petlm.2018.03.007>
- Kusrini, E., Lukita, M., Gozan, M., Susanto, B. H., Widodo, T. W., Nasution, D. A., Wu, S., Rahman, A., & Siregar, Y. I. (2016). Biogas from Palm Oil Mill Effluent: Characterization and Removal of CO₂ Using Modified Clinoptilolite Zeolites in a Fixed-Bed Column. *International Journal of Technology*, 4, 625–634. <https://doi.org/10.14716/ijtech.v7i4.2207>
- Lam, M. K., & Lee, K. T. (2011). Renewable and sustainable bioenergies production from palm oil mill effluent (POME): Win–win strategies toward better environmental protection. *Biotechnology Advances*, 29(1), 124–141. <https://doi.org/10.1016/j.biotechadv.2010.10.001>

- Laoire, C., Mukerjee, S., Plichta, E. J., Hendrickson, M. A., & Abraham, K. M. (2011). Rechargeable Lithium/TEGDME- LiPF₆/O₂ Battery. *Journal of The Electrochemical Society*, *158*(3). <https://doi.org/10.1149/1.3531981>
- Ma, K. Y., Sun, M. Y., Dong, W., He, C. Q., Chen, F. L., & Ma, Y. L. (2016). Effects of nutrition optimization strategy on rhamnolipid production in a *Pseudomonas aeruginosa* strain DN1 for bioremediation of crude oil. *Biocatalysis and Agricultural Biotechnology*, *6*, 144–151. <https://doi.org/10.1016/j.bcab.2016.03.008>
- Marchant, R., & Banat, I. M. (2012). Microbial biosurfactants: challenges and opportunities for future exploitation. *Trends in Biotechnology*, *30*(11), 558–565. <https://doi.org/10.1016/j.tibtech.2012.07.003>
- Mohamed, S. K., Asif, M., Nazari, M. V., Baharetha, H. M., Mahmood, S., Yatim, A. R. M., & Aman Shah Abdul Majid, 4 and Amin Malik Shah Abdul Majid. (2019). Antiangiogenic activity of sophorolipids extracted from refined bleached deodorized palm olein. *Indian Journal of Pharmacology*, *51*(1), 45–54. https://doi.org/10.4103/ijp.IJP_312_18
- Mohammed, R. R., & Chong, M. F. (2014). Treatment and decolorization of biologically treated Palm Oil Mill Effluent (POME) using banana peel as novel biosorbent. *Journal of Environmental Management*, *112*, 237–249. <https://doi.org/10.1016/j.jenvman.2013.11.031>
- Nakahara, H., Lee, S., Shoyama, Y., & Shibata, O. (2011). The role of palmitic acid in pulmonary surfactant systems by Langmuir monolayer study: Lipid–peptide interactions. *Soft Matter Journal*, *24*. <https://doi.org/10.1039/C1SM06345F>
- Nawawi, W. M. F. W., Jamal, P., & Alam, M. Z. (2010). Utilization of sludge palm oil as a novel substrate for biosurfactant production. *Bioresource Technology*, *101*(23), 9241–9247. <https://doi.org/10.1016/j.biortech.2010.07.024>
- Nayarisseri, A., Singh, P., & Singh, S. K. (2018). Screening, isolation and characterization of biosurfactant producing *Bacillus subtilis* strain ANSKLAB03. *Bioinformation*, *14*(06), 304–314. <https://doi.org/10.6026/97320630014304>
- Nurfarahin, A. H., Mohamed, M. S., & Phang, L. Y. (2018). Culture medium development for microbial-derived surfactants production—an overview. *Molecules*, *23*(5), 1–26. <https://doi.org/10.3390/molecules23051049>
- Nwaguma, I. V., Chikere, C. B., & Okpokwasili, G. C. (2019). Isolation and Molecular Characterization of Biosurfactant-Producing Yeasts from Saps of *Elaeis guineensis* and *Raphia africana*. *Microbiology Research Journal International*, *29*(4), 1–12. <https://doi.org/10.9734/mrji/2019/v29i430169>

- Oliveira, E. M. De, Sales, V. H. G., Andrade, M. S., Zilli, J. É., Borges, W. L., & Souza, T. M. De. (2021). Isolation and Characterization of Biosurfactant-Producing Bacteria from Amapaense Amazon Soils. *International Journal of Microbiology*, 2021. <https://doi.org/10.1155/2021/9959550>
- Pal, S., Chatterjee, N., Das, A. K., McClements, D. J., & Dhar, P. (2023). Sophorolipids: A comprehensive review on properties and applications. *Advances in Colloid and Interface Science*, 313(102856). <https://doi.org/10.1016/j.cis.2023.102856>
- Patowary, K., Patowary, R., Kalita, M. C., & Deka, S. (2017). Characterization of biosurfactant produced during degradation of hydrocarbons using crude oil as sole source of carbon. *Frontiers in Microbiology*, 8(FEB), 1–14. <https://doi.org/10.3389/fmicb.2017.00279>
- Ribeiro, I. A., Bronze, M. R., Castro, M. F., & Ribeiro, M. H. L. (2012). Design of selective production of sophorolipids by *Rhodotorula bogoriensis* through nutritional requirements. *Journal of Molecular Recognition*, 25(11), 630–640. <https://doi.org/10.1002/jmr.2188>
- Rufino, R. D., de Luna, J. M., de Campos Takaki, G. M., & Sarubbo, L. A. (2014). Characterization and properties of the biosurfactant produced by *Candida lipolytica* UCP 0988. *Electronic Journal of Biotechnology*, 17(1), 34–38. <https://doi.org/10.1016/j.ejbt.2013.12.006>
- Sachdev, D. P., & Cameotra, S. S. (2013). Biosurfactants in agriculture. *Applied Microbiology and Biotechnology*, 97(3), 1005–1016. <https://doi.org/10.1007/s00253-012-4641-8>
- Saharan, B. S., Sahu, R. K., & Sharma, D. (2011). *A Review on Biosurfactants : Fermentation , Applications , Current. 2011*, 1–42.
- Saimmai, A., Onlamool, T., & Maneerat, S. (2013). An efficient biosurfactant-producing bacterium *Selenomonas ruminantium* CT2, isolated from mangrove sediment in south of Thailand. *World Journal of Microbiology and Biotechnology*, 29, 87–102. <https://doi.org/10.1007/s11274-012-1161-8>
- Sarheed, O., Dibi, M., & Ramesh, K. V. R. N. S. (2020). Studies on the effect of oil and surfactant on the formation of alginate-based O/W lidocaine nanocarriers using nanoemulsion template. *Pharmaceutics*, 12(12), 1–21. <https://doi.org/10.3390/pharmaceutics12121223>
- Sari, C. N., Hertadi, R., Fahriz, A., Harahap, P., Yusuf, M., Ramadhan, A., & Gozan, M. (2020). Originated from Bledug Kuwu Mud Volcano in Central Java for Microbial Enhanced Oil Recovery. *Processes*, 8(716), 1–17.
- Sari, C. N., Hertadi, R., Gozan, M., & Roslan, A. M. (2019). Factors Affecting the

Production of Biosurfactants and their Applications in Enhanced Oil Recovery (EOR). A Review. *IOP Conference Series: Earth and Environmental Science*, 353(1), 0–14. <https://doi.org/10.1088/1755-1315/353/1/012048>

- Saruni, N. H., Abdul Razak, S., Habib, S., Ahmad, S. A., Alias, S. A., Wan Johari, W. L., Smykla, J., & Yasid, N. A. (2019). Comparative Screening Methods for the Detection of Biosurfactant-Producing Capability of Antarctic Hydrocarbon-degrading *Pseudomonas* sp. *Journal of Environmental Microbiology and Toxicology*, 7(1), 44–47. <https://doi.org/10.54987/jemat.v7i1.471>
- Satpute, S. K., Bhuyan, S. S., & Chopade, B. A. (2010). Molecular Genetics of Biosurfactant Synthesis in Microorganisms. In *Advance in Experimental Medicine and Biology* (pp. 14–41). Springer New York. https://doi.org/10.1007/978-1-4419-5979-9_2
- Sharma, P., Sangwan, S., & Kaur, H. (2019). Process Parameters for Biosurfactant Production using Yeast *Meyerozyma guilliermondii* YK32. *Environmental Monitoring and Assessment*, 191(531). <https://doi.org/10.1007/s10661-019-7665-z>
- Singh, P. B., Sharma, S., Saini, H. S., & Chada, B. S. (2009). Biosurfactant production by *Pseudomonas* sp. and its role in aqueous phase partitioning and biodegradation of chlorpyrifos. *Letters in Applied Microbiology*, 49(3), 378–383. <https://doi.org/10.1111/j.1472-765X.2009.02672.x>
- Singh, P., Patil, Y., & Rale, V. (2019). Biosurfactant production: emerging trends and promising strategies. *Journal of Applied Microbiology*, 126(1), 2–13. <https://doi.org/10.1111/jam.14057>
- Solaiman, D. ., Ashby, R. D., & Crocker, N. . (2015). High-titer production and strong antimicrobial activity of sophorolipids from *Rhodotorula bogoriensis*. *Biotechnology Prog.*, 31, 867–874.
- Sun, W., Cao, W., Jiang, M., Saren, G., Liu, J., Cao, J., Ali, I., Yu, X., Peng, C., & Naz, I. (2018). Isolation and characterization of biosurfactant-producing and diesel oil degrading *Pseudomonas* sp. CQ2 from Changqing oil field, China. *RSC Advances*, 8(69), 39710–39720. <https://doi.org/10.1039/c8ra07721e>
- Varadavenkatesan, T., & Murty, V. R. (2013). Production of a Lipopeptide Biosurfactant by a Novel *Bacillus* sp. and Its Applicability to Enhanced Oil Recovery . *ISRN Microbiology*, 2013, 1–8. <https://doi.org/10.1155/2013/621519>
- Vijayakumar, S., & Saravanan, V. (2015). Biosurfactants-types, sources and applications. *Research Journal of Microbiology*, 10(5), 181–192. <https://doi.org/10.3923/jm.2015.181.192>

- Zainal, N. H., Jalani, N. F., Mamat, R., & Astimar, A. A. (2017). A review on the development of palm oil mill effluent (POME) final discharge polishing treatments. *Journal of Oil Palm Research*, 29(4), 528–540. <https://doi.org/10.21894/jopr.2017.00012>
- Zargar, A. N., Mishra, S., Kumar, M., & Srivastava, P. (2022). Isolation and chemical characterization of the biosurfactant produced by *Gordonia* sp. IITR100. *PLoS ONE*, 17(4) April. <https://doi.org/10.1371/journal.pone.0264202>