

DAFTAR PUSTAKA

- Abdel-Karim, O. H., Abo-Shady, A. M., Ismail, G. A., dan Gheda, S. F. (2022). Potential Effect of *Turbinaria decurrens* Acetone Extract on The Biochemical and Histological Parameters of Alloxan-induced Diabetic Rats. *International Journal of Environmental Health Research*, 32(7), 1447–1468. <https://doi.org/10.1080/09603123.2021.1888895>
- Abdullah, A., Nurilmala, M., Sari, A. S., dan Jacob, A. M. (2018). Mini-COI Barcodes Sebagai Penanda Molekuler Untuk Ketertelusuran Label Pangan Berbagai Produk Olahan Ikan Sidat. *Jurnal Pengolahan Hasil Perikanan Indonesia*, 21(2), 377. <https://doi.org/10.17844/jphpi.v21i2.23507>
- Ahmed, S., Ibrahim, M., Nantasenamat, C., Nisar, M. F., Malik, A. A., Waheed, R., Ahmed, M. Z., Ojha, S. C., dan Alam, M. K. (2022). Pragmatic Applications and Universality of DNA Barcoding for Substantial Organisms at Species Level: A Review to Explore a Way Forward. *BioMed Research International*, 2022, 1–19. <https://doi.org/10.1155/2022/1846485>
- Akbar, M. R., Pramesti, R., dan Ridlo, A. (2018). Aktivitas Antioksidan Rumput Laut *Acanthophora muscoides* (Linnaeus) Bory Dari Pantai Krakal Gunung Kidul Yogyakarta. *Journal of Marine Research*, 7(1), 9–18.
- Alshehri, M. A., Aziz, A. T., Alzahrani, O., Alasmari, A., Ibrahim, S., Osman, G., dan Bahattab, O. (2019). DNA-barcoding and Species Identification for Some Saudi Arabia Seaweeds using rbcL Gene. *Journal of Pure and Applied Microbiology*, 13(4), 2035–2044. <https://doi.org/10.22207/JPAM.13.4.15>
- Amanda, K., Sari, R., dan Apridamayanti, P. (2019). Optimasi Suhu Annealing Proses PCR Amplifikasi Gen shv Bakteri *Escherichia coli* Pasien Ulkus Diabetik. *Jurnal Mahasiswa Farmasi Fakultas Kedokteran UNTAN*, 4(1), 1–6.
- Anissa, R. K., Lisdiana, L., dan Widayanti, A. T. (2024). Optimization of Nested PCR Method for *Vibrio parahaemolyticus* AHPND Detection in Vannamei Shrimp (*Litopenaeus vannamei*). *LenteraBio*, 13(1), 1–13. <https://doi.org/10.26740/lenterabio.v13n1.p1-13>
- Bahtiar, A., dan Anggraeni, D. (2017). Influence of The Extract of Brown Seaweed (*Turbinaria decurrens* bory) on The Histology of Colon on AOM-DSS Mouse Model. *OnLine Journal of Biological Sciences*, 17(4), 382–386. <https://doi.org/10.3844/ojbsci.2017.382.386>
- Bartolo, A. G., Zammit, G., Peters, A. F., dan Küpper, F. C. (2020). The Current State of DNA Barcoding of Macroalgae in the Mediterranean Sea : Presently Lacking but Urgently Required. *Botanica Marina*, 63(3), 253–272. <https://doi.org/10.1515/bot-2019-0041>

- Barzkar, N., Jahromi, S. T., Poorsaheli, H. B., dan Vianello, F. (2019). Metabolites from marine microorganisms, micro, and macroalgae: Immense scope for pharmacology. *Marine Drugs*, 17(8), 1–29. <https://doi.org/10.3390/md17080464>
- Bast, F., Bhushan, S., dan John, A. A. (2015). Brown Barcoded as Red But Reality Is Green! How Epiphytic Green Algae Confuse Phycologists? *Webbia*, 70(1), 59–63. <https://doi.org/10.1080/00837792.2015.1014217>
- Buchori, A., Firmansah, H., Anika, M., Ratnawati, S., Ulfa, U. T., dan Zendrato, Y. (2023). Komparasi Metode Ekstraksi DNA Menggunakan Daun Padi: Review. *Agriculture and Biological Technology*, 1(1), 40–50. <https://doi.org/10.61761/agiotech.1.1.40-50>
- Burhan, R. Y. P., Zetra, Y., Pusparatu, Suprpto, dan Hidayat, A. T. (2020). Utilization of fatty acids from the edible oil industry in synthesis of 2-hydroxy propyl palmitate as a bioadditive solar fuel Utilization of fatty acids from the edible oil industry in synthesis of 2-hydroxy propyl palmitate as a bioadditive solar fuel. *Journal of Physics: Conference Series*, 1517, 1–5. <https://doi.org/10.1088/1742-6596/1517/1/012087>
- Cerqueira, T., Oliveira, A. M. L., dan Lemos, M. F. L. (2024). DNA Barcoding and Phylogenetic Relationships of Ecologically and Commercially Important Seaweed Species from The Azores (NE Atlantic). *Aquatic Botany*, 195, 103793. <https://doi.org/10.1016/j.aquabot.2024.103793>
- Cheng, T., Xu, C., Lei, L., Li, C., Zhang, Y., dan Zhou, S. (2016). Barcoding the Kingdom Plantae : New PCR Primers for ITS Regions of Plants with Improved Universality and Specificity. *Molecular Ecology Resources*, 16, 138–149. <https://doi.org/10.1111/1755-0998.12438>
- Cokrowati, N., Yatin, N., Affandi, R. I., Susanto, M., dan Yanti, S. D. (2024). Seaweed Diversity in Ekas Bay, East Lombok Regency, West Nusa Tenggara. *Jurnal Biologi Tropis*, 24(1), 714–721. <https://doi.org/10.29303/jbt.v24i1.6702>
- Darmawati, P., Ode, I., Dwi Hari Setyono, B., Laheng, S., Muhtahidah, T., Putri Sari, Y., Wahyuni Putri, I., Abidin, Z., Sukendar, W., Tsaniyatul Miratis Sulthoniyah, S., Burhani Marda, A., Amri Yusuf, M., Nisa Nurul Suci, A., Abdullah, A., dan Setyaka Editor Nurdjanah Hamid Ratna Sari Dewi, V. A. (2023). *Kiat Agribisnis Rumput Laut Tohar Media* (Vol. 1). <https://toharmedia.co.id>
- de Araujo, L. M., Rocha, D. S. B., Affe, H. M. de J., dan de Jesus, P. B. (2023). A Scientometric Study of The Molecular Data on Brazilian Red Algae. *Acta Botanica Brasilica*, 37, 1–9. <https://doi.org/10.1590/1677-941X-ABB-2022-0174>
- de Fretes, H., Susanto, A., Prasetyo, B., dan Limantara, L. (2012). Karotenoid dari Makroalgae dan Mikroalgae: Potensi Kesehatan Aplikasi dan Bioteknologi. *Jurnal Teknologi dan Industri Pangan*, 23(2), 221–228. <https://doi.org/10.6066/jtip.2012.23.2.221>

- Deepa, S., Sujatha, K., dan Velmurugan, D. (2019). The Identification of Bioactive Compounds from *Turbinaria ornata* (Turner) J . Agaradh and Computational Studies. *Pharmacognosy Journal*, 11(5), 873–883.
- Dewi, Y. L., Yuniza, A., Nuraini, Sayuti, K., dan Mahata, M. E. (2018). Review: Potency, Limiting Factors, and Processing of Brown Seaweed (Phaeophyceae) for Laying Hens Feed. *Jurnal Peternakan Indonesia*, 20(2), 53–69. <https://doi.org/10.25077/jpi.20.2.53-69.2018>
- Dhargalkar, V. K., dan Kavlekar, D. (2004). Seaweeds – A field Manual. In *National Institute of Oceanography* (hal. 36).
- El-Gazzar, N., Said, L., Al-Otibi, F. O., AbdelGawwad, M. R., dan Rabie, G. (2025). Antimicrobial and cytotoxic activities of natural (Z)-13-docosenamide derived from *Penicillium chrysogenum*. *Frontiers in Cellular and Infection Microbiology*, 15(February), 1–27. <https://doi.org/10.3389/fcimb.2025.1529104>
- Fadlan, M., Jabbar, F. B. A., dan Mahfud, C. R. (2024). Analisis Perbandingan Pertumbuhan Rumput Laut (*Kappaphycus alvarezii*) Menggunakan Metode Vertinet dan Horinet di Perairan Binuang, Kabupaten Polewali Mandar. *Seminar Nasional PKP I*, 211–220.
- FAO. (2024). The State of World Fisheries and Aquaculture 2024 - Blue Transformation in Action. *Food and Agriculture Organization of the United Nations*, 35(3), 4–13. <https://doi.org/10.4060/cd0683en>
- Fletcher, H. R., Biller, P., Ross, A. B., dan Adams, J. M. M. (2017). The Seasonal Variation of Fucoidan Within Three Species of Brown Macroalgae. *Algal Research*, 22, 79–86. <https://doi.org/10.1016/j.algal.2016.10.015>
- García-Alegría, A. M., Anduro-Corona, I., Pérez-Martínez, C. J., Corella-Madueño, M. A. G., Rascón-Durán, M. L., dan Astiazaran-Garcia, H. (2020). Quantification of DNA Through The NanoDrop Spectrophotometer: Methodological Validation Using Standard Reference Material and Sprague Dawley Rat and Human DNA. *International Journal of Analytical Chemistry*, 2020, 1–9. <https://doi.org/10.1155/2020/8896738>
- Gomes, L., Monteiro, P., Cotas, J., Gonçalves, A. M. M., Fernandes, C., Gonçalves, T., dan Pereira, L. (2022). Seaweeds' Pigments and Phenolic Compounds with Antimicrobial Potential. *Biomolecular Concepts*, 13(1), 89–102. <https://doi.org/10.1515/bmc-2022-0003>
- Halimah, M., Sari, D. S., dan Anggraeni, S. R. (2022). Sosialisasi Konservasi Rumput Laut Terkait Kegiatan Pengolahan Rumput Laut di Pesisir Pantai Karapyak, Desa Bagolo, Pangandaran. *JoB*, 2(2), 47–60.
- Handayani, S., Widhiono, I., dan Widyartini, D. S. (2023). Macroalgae Diversity and Its

- Relationship with Environmental Conditions in Polluted Waters of Seribu Islands, Jakarta Bay, Indonesia. *Biodiversitas*, 24(11), 6279–6286. <https://doi.org/10.13057/biodiv/d241151>
- Handayani, T. (2018). Mengenal Makroalga *Turbinaria* dan Pemanfaatannya. *Oseana*, 43(4), 28–39. <https://doi.org/10.14203/oseana.2018.vol.43no.4.5>
- Hebert, P. D. N., dan Barrett, R. D. H. (2005). Reply to the Comment by L. Prendini on “Identifying Spiders Through DNA Barcodes.” *Canadian Journal of Zoology*, 83(3), 505–506. <https://doi.org/10.1139/z05-026>
- Hidibun, O. La, Nur, A. I., dan Oetama, D. (2024). Studi Keanekaragaman Makroalga Pada Kawasan Limbah Thermal PLTU Nii Tanasa, Kecamatan Lalongga Sumeeto, Kabupaten Konawe, Sulawesi Tenggara. *BioWallacea: Jurnal Penelitian Biologi (Journal of Biological Research)*, 11(1), 55–67.
- Hutagalung, F., Timotiwu, P. B., Ginting, Y. C., dan Manik, T. K. B. (2021). Pengaruh Pengurangan Intensitas Radiasi Matahari terhadap Pertumbuhan dan Kualitas Selada Romaine (*Lactuca sativa* var. Longifolia). *Jurnal Agrotek Tropika*, 9(3), 453–461. <https://doi.org/10.23960/jat.v9i3.5311>
- Insani, A. N., Hafiludin, H., dan Chandra, A. B. (2022). Pemanfaatan Ekstrak Gracilaria sp. dari Perairan Pamekasan sebagai Antioksidan. *Juvenil: Jurnal Ilmiah Kelautan dan Perikanan*, 3(1), 16–25. <https://doi.org/10.21107/juvenil.v3i1.14783>
- Islami, F., Ridlo, A., dan Pramesti, R. (2014). Aktivitas Antioksidan Ekstrak Rumput Laut *Turbinaria decurrens* Bory de Saint-Vincent dari Pantai Krakal, Gunung Kidul, Yogyakarta. *Journal of Marine Research*, 3(4), 605–616.
- Ismail, M. M., El Zokm, G. M., El Sikaily, A. M., Selim, A. I., dan Ismail, G. A. (2023). Chemodiversity and Bioactivity Assessment of Phlorotannins from Some Phaeophyta Species from The Red Sea. *Journal of Applied Phycology*, 35(4), 1769–1788. <https://doi.org/10.1007/s10811-023-03000-4>
- Jakirman, E., dan Miharja, J. (2020). Kelimpahan dan Keanekaragaman Lamun, Alga Cokelat di Pantai Karapyak Pangandaran Jawa Barat, Indonesia. *PERENNIAL*, 1(2), 77–89. <https://doi.org/10.55171/perennial.v1i2.833>
- Januar, H. I., dan Wikanta, T. (2011). Korelasi Kandungan Fukosantin *Turbinaria* sp terhadap Nutrien Laut di Pantai Binuangeun dan Krakal. *Squalen*, 6(1), 18–25.
- Jaswir, I., dan Monsur, H. A. (2011). Anti-Inflammatory Compounds of Macro Algae Origin: A Review. *Journal of Medicinal Plant Research*, 5(33), 7146–7154. <https://doi.org/10.5897/JMPR11.018>
- Jiksing, C., Ongkudon, M. M., Thien, V. Y., Rodrigues, K. F., dan Yong, W. T. L. (2022). Recent Advances in Seaweed Seedling Production: A Review of Eucheumatoids and

- Other Valuable Seaweeds. *Algae*, 37(2), 105–121.
<https://doi.org/10.4490/algae.2022.37.5.11>
- Kantachumpoo, A., Uwai, S., Noiraksar, T., dan Komatsu, T. (2015). Systematics of Marine Brown Alga *Sargassum* from Thailand : A Preliminary Study Based on Morphological Data and Nuclear Ribosomal Internal Transcribed Spacer 2 (ITS2) Sequences. *Ocean Science Journal*, 50(2), 251–262.
<https://doi.org/10.1007/s12601-015-0022-4>
- Karimzadeh, H. R., Farhang, H. R., Rahimmalek, M., dan Esfahani, M. T. (2023). Spatio-temporal variations of extract produced and fatty acid compounds identified of *Gundelia tournefortii* L. seeds in central Zagros, Iran. *Scientific Reports*, 13(1), 1–18.
<https://doi.org/10.1038/s41598-023-34538-5>
- Khafid, A., Wiraputra, M. D., Putra, A. C., Khoirunnisa, N., Putri, A. A. K., Suedy, S. W. A., dan Nurchayati, Y. (2023). Uji Kualitatif Metabolit Sekunder pada Beberapa Tanaman yang Berkhasiat sebagai Obat Tradisional. *Buletin Anatomi dan Fisiologi*, 8(1), 61–70. <https://doi.org/10.14710/baf.8.1.2023.61-70>
- Khosravinia, H., Murthy, H. N. N., Parasad, D. T., dan Pirany, N. (2007). Optimizing factors influencing DNA extraction from fresh whole avian blood. *African Journal of Biotechnology*, 6(4), 481–486.
- Kim, S. Y., Manghisi, A., Morabito, M., Yang, E. C., Yoon, H. S., Miller, K. A., dan Boo, S. M. (2014). Genetic Diversity and Haplotype Distribution of *Pachymeniopsis gargiuli* sp. nov. and *P. lanceolata* (Halymeniales, Rhodophyta) in Korea, with Notes on Their Non-Native Distributions. *J. Phycol.*, 50(5), 885–896.
<https://doi.org/10.1111/jpy.12218>
- KKP. (2025). *Laporan Kinerja Kementerian Kelautan dan Perikanan 2024: Vol. II*. <https://kkp.go.id/publikasi/akuntabilitas-kinerja/pelaporan-kinerja/detail/laporan-kinerja-final-tahun-202467dbca81410e8.html>
- Kliebenstein, D. J. (2004). Secondary Metabolites and Plant/Environment Interactions: A View Through *Arabidopsis thaliana* Tinged Glasses. *Plant, Cell and Environment*, 27, 675–684. <https://doi.org/https://doi.org/10.1111/j.1365-3040.2004.01180.x>
- Kress, W. J., dan Erickson, D. L. (2008). DNA barcodes: Genes, genomics, and bioinformatics. *Proceedings of the National Academy of Sciences of the United States of America*, 105(8), 2761–2762. <https://doi.org/10.1073/pnas.0800476105>
- Kress, W. J., García-Robledo, C., Uriarte, M., dan Erickson, D. L. (2015). DNA Barcodes for Ecology, Evolution, and Conservation. *Trends in Ecology and Evolution*, 30(1), 25–35. <https://doi.org/10.1016/j.tree.2014.10.008>
- Kurniasih, E., Rahmi, R., Darusman, D., dan Supardan, M. D. (2023). Transesterifikasi Enzimatis Mono-Digliserida : Efek Peningkatan Rasio Pelarut n-Heksana Terhadap

- Aktifitas Enzim Lipase Immobile *Candida antartica* dalam Meningkatkan Konversi Substrat. *Prosiding Sains Nasional dan Teknologi*, 13(1), 7–13. <https://doi.org/10.36499/psnst.v13i1.9468>
- Lima, G. S., Lima, N. M., Roque, J. V., de Aguiar, D. V. A., Oliveira, J. V. A., dos Santos, G. F., Chaves, A. R., dan Vaz, B. G. (2022). LC-HRMS/MS-Based Metabolomics Approaches Applied to the Detection of Antifungal Compounds and a Metabolic Dynamic Assessment of Orchidaceae. *Molecules*, 27(22). <https://doi.org/10.3390/molecules27227937>
- Lopes, C., Obando, J. M. C., Santos, T. C. dos, Cavalcanti, D. N., dan Teixeira, V. L. (2024). Abiotic Factors Modulating Metabolite Composition in Brown Algae (Phaeophyceae): Ecological Impacts and Opportunities for Bioprospecting of Bioactive Compounds. *Marine drugs*, 22(544), 1–30. <https://doi.org/https://doi.org/10.3390/md22120544>
- Luringunusa, E., Sanger, G., Sumilat, D. A., Montolalu, R. I., Damongilala, L. J., dan Dotulong, V. (2023). Qualitative Phytochemical Analysis of *Gracilaria verrucosa* from North Sulawesi Waters. *Jurnal Ilmiah PLATAX*, 11(2), 451–463. <https://doi.org/10.35800/jip.v11i2.48777>
- Madina, S. M., Syafiuddin, Samawi, M. F., Muhiddin, A. H., dan Hatta, M. (2022). Water Quality of Seaweed Cultivation (*Eucheuma cottonii*) Location in Old Takalar, Mappakasunggu District, Takalar. *Jurnal Ilmu Kelautan*, 8(2), 28–36.
- Manikandan, R., Parimalanandhini, D., Mahalakshmi, K., Beulaja, M., Arumugam, M., Janarthanan, S., Palanisamy, S., You, S., dan Prabhu, N. M. (2020). Studies on Isolation, Characterization of Fucoidan from Brown Algae *Turbinaria decurrens* and Evaluation of It's In Vivo and In Vitro Anti-Inflammatory Activities. *International Journal of Biological Macromolecules*. <https://doi.org/10.1016/j.ijbiomac.2020.05.152>
- Manzoor, M. F., Afraz, M. T., Yilmaz, B. B., Adil, M., Arshad, N., Goksen, G., Ali, M., dan Zeng, X. A. (2024). Recent Progress in Natural Seaweed Pigments: Green Extraction, Health-Promoting Activities, Techno-Functional Properties and Role in Intelligent Food Packaging. *Journal of Agriculture and Food Research*, 15(December 2023), 100991. <https://doi.org/10.1016/j.jafr.2024.100991>
- Martínez, E. R., Schroeder, D. C., Thuestad, G., dan Hoell, I. A. (2024). Brown Algae (Phaeophyceae) Stressors and Illnesses: A Review for A Sustainable Aquaculture Under Climate Change. *Frontiers in Aquaculture*, 3(June), 1–22. <https://doi.org/Dio:10.3389/faquc.2024.1390415>
- Matin, M., Koszarska, M., Atanasov, A. G., Król-Szmajda, K., Józwik, A., Stelmasiak, A., dan Hejna, M. (2024). Bioactive Potential of Algae and Algae-Derived Compounds: Focus on Anti-Inflammatory, Antimicrobial, and Antioxidant Effects. *Molecules*, 29(19), 4695. <https://doi.org/10.3390/molecules29194695>

- Mattio, L., dan Payri, C. (2010). Assessment of five markers as potential barcodes for identifying *Sargassum* subgenus *Sargassum* species (Phaeophyceae, Fucales). *Cryptogamie, Algologie*, 31(4), 467–485.
- Meinita, M. D. N., Akromah, N., Andriyani, N., Setijanto, Harwanto, D., dan Liu, T. (2021). Molecular Identification of *Gracilaria* Species (Gracilariales, Rhodophyta) Obtained from The South Coast of Java Island, Indonesia. *Biodiversitas*, 22(7), 3046–3056. <https://doi.org/10.13057/biodiv/d220759>
- Meinita, M. D. N., Harwanto, D., dan Choi, J. S. (2022). Seaweed Exhibits Therapeutic Properties against Chronic Diseases: An Overview. In *Applied Sciences (Switzerland)* (Vol. 12, Nomor 5). <https://doi.org/10.3390/app12052638>
- Meinita, M. D. N., Harwanto, D., Sohn, J. H., Kim, J. S., dan Choi, J. S. (2021). *Hizikia fusiformis*: Pharmacological and Nutritional Properties. *Foods*, 10(1660), 1–27. <https://doi.org/10.3390/foods10071660>
- Meinita, M. D. N., Yulia, R., Nursid, M., Nurulita, N. A., Harwanto, D., Riviani, dan Riyanti. (2024). Morpho-anatomical characteristics, phytochemical and antibacterial potential of *Sargassum polycystum* collected along the southern coast of Java, Indonesia. *Biodiversitas*, 25(8), 2669–2681. <https://doi.org/10.13057/biodiv/d250840>
- Menezes, M., Bicudo, C. E. M., Moura, C. W. N., Alves, A. M., Santos, A. A., Pedrini, A. de G., Araújo, A., Tucci, A., Fajar, A., Malone, C., Kano, C. H., Sant'Anna, C. L., Branco, C. Z., Odebrecht, C., Peres, C. K., Neuhaus, E. B., Eskinazi-Leça, E., Aquino, E., Nauer, F., dan da Silva, W. J. (2015). Update of the Brazilian Floristic List of Algae and Cyanobacteria. *Rodriguesia*, 66(4), 1047–1062. <https://doi.org/10.1590/2175-7860201566408>
- Miguel, S. P., D'Angelo, C., Ribeiro, M. P., Simões, R., dan Coutinho, P. (2023). Chemical Composition of Macroalgae Polysaccharides from Galician and Portugal Coasts: Seasonal Variations and Biological Properties. *Marine Drugs*, 21(11), 589. <https://doi.org/10.3390/md21110589>
- Mikami, K., dan Hosokawa, M. (2013). Biosynthetic Pathway and Health Benefits of Fucoxanthin, an Algae-Specific Xanthophyll in Brown Seaweeds. *International Journal of Molecular Sciences*, 14(7), 13763–13781. <https://doi.org/10.3390/ijms140713763>
- Mustafa, H., Rachmawati, I., dan Udin, Y. (2017). Pengukuran Konsentrasi dan Kemurnian DNA Genom Nyamuk *Anopheles barbirostris*. *Jurnal Vektor Penyakit*, 10(1), 7–10. <https://doi.org/10.22435/vektorp.v10i1.6251.7-10>
- Ncube, B., Finnie, J. F., dan Staden, J. Van. (2012). Quality from the field: The impact of environmental factors as quality determinants in medicinal plants. *South African*

- Journal of Botany*, 82, 11–20. <https://doi.org/10.1016/j.sajb.2012.05.009>
- Nursid, M., Wikanta, T., dan Rini, S. (2013). Aktivitas Antioksidan, Sitotoksitas dan Kandungan Fukosantin Ekstrak Rumput Laut Coklat Dari Pantai Binuangeun, Banten. *JPB Kelautan dan Perikanan*, 8(1), 73–84. <https://doi.org/10.15578/jpbkp.v8i1.55>
- Ode, I. (2014). Kandungan Alginat Rumput Laut *Sargassum crassifolium* dari Perairan Pantai Desa Hutumuri, Kecamatan Leitimur Selatan, Kota Ambon. *Jurnal Ilmiah Agribisnis dan Perikanan*, 6(3), 47–54.
- Oryza, D., Mahanal, S., dan Sari, M. S. (2017). Identifikasi Rhodophyta sebagai Bahan Ajar Di Perguruan Tinggi. *Jurnal Pendidikan: Teori, Penelitian, dan Pengembangan Penelitian, dan Pengembangan*, 2(3), 309–314.
- Pakidi, C. S., dan Suwoyo, H. S. (2017). Potensi dan Pemanfaatan Bahan Aktif Alga Cokelat *Sargassum* sp. *Octopus*, 6(1), 551–562.
- Pečnikar, Ž. F., dan Buzan, E. V. (2014). 20 Years Since the Introduction of DNA Barcoding: From Theory to Application. *Journal of Applied Genetics*, 55(1), 43–52. <https://doi.org/10.1007/s13353-013-0180-y>
- Pegg, T. J., Gladish, D. K., dan Baker, R. L. (2021). Algae to angiosperms: Autofluorescence for rapid visualization of plant anatomy among diverse taxa. *Applications in Plant Sciences*, 9(6), e11437. <https://doi.org/10.1002/aps3.11437>
- Peñalver, R., Lorenzo, J. M., Ros, G., Amarowicz, R., Pateiro, M., dan Nieto, G. (2020). Seaweeds as a Functional Ingredient for a Healthy Diet. *Marine Drugs*, 18(6), 1–27. <https://doi.org/10.3390/md18060301>
- Pramesti, R., Susanto, A. B., S, W., Ridlo, A., Subagiyo, S., dan Oktaviaris, Y. (2016). Struktur Komunitas dan Anatomi Rumput Laut di Perairan Teluk Awur, Jepara dan Pantai Krakal, Yogyakarta. *Jurnal Kelautan Tropis*, 19, 81. <https://doi.org/10.14710/jkt.v19i2.822>
- Qari, R., Siyal, F. K., dan Mahar, A. R. (2019). A Comparative Study on the Seasonal Variation in Alginic Acid Extracted from Two Brown Seaweed Species *P. pavonica* Linnaeus and *P. tetrastrum* Hauck. *Acta Scientific Microbiology*, 2(9), 90–99. <https://doi.org/10.31080/asmi.2019.02.0406>
- Rafi, M. (2024). *Perkembangan Terkini Pemisahan Analitik Sebagai Perangkat Analisis Komponen Kimia* (Orasi Ilmiah, Vol. 1). IPB Press. ipbpress.com
- Rahayu, D. A., dan Jannah, M. (2019). *DNA Barcode Hewan dan Tumbuhan Indonesia* (E. D. Nugroho (ed.)). Yayasan Inspirasi Ide Berdaya.
- Rahmatika, Z., dan Sudarlin. (2021). Theoretical Modification of Pheophytin Using Cu,

- Ni, and Zn Atoms as a Sensitizer for Dye Sensitized Solar Cell (DSSC). *Journal of Physics: Conference Series*, 1788(1), 1–10. <https://doi.org/10.1088/1742-6596/1788/1/012006>
- Rezeki, S., Sarjani, T. M., Maharani, H., Sihombing, S. M., Tarigan, E. B., Nasution, I., Simatupang, S. P. S., dan Antika, M. (2023). Identifikasi Salah Satu Bentuk Sel Epidermis Pada Beberapa Daun Sub Kelas Asteridae. *Jurnal Biologi dan Pembelajarannya (JB&P)*, 10(1), 7–13. <https://doi.org/10.29407/jbp.v10i1.18958>
- Rohfritsch, A., Payri, C., Stiger, V., dan Bonhomme, F. (2007). Molecular and Morphological Relationships Between Two Closely Related Species, *Turbinaria ornata* and *T. conoides* (Sargassaceae, Phaeophyceae). *Biochemical Systematics and Ecology*, 35(2), 91–98. <https://doi.org/10.1016/j.bse.2006.09.002>
- Rosmini, Rismiarti, Z., Indra, A. I. N., dan Wahyuni, Y. (2024). Variasi Konsentrasi dan Penggunaan Buffer Tris Acetat EDTA Berulang Terhadap Kualitas Pita DNA *Mycobacterium tuberculosis*. *Nutriture Journal*, 3(2), 85–95. <https://doi.org/10.31290/nj.v3i2.4332>
- Saide, A., Lauritano, C., dan Ianora, A. (2020). Pheophorbide A: State of the art. *Marine Drugs*, 18(5), 1–12. <https://doi.org/10.3390/md18050257>
- Sami, F. J., dan Nur, S. (2022). Isolation, Identification and Biochemical Studies of Gallic Acid from *Turbinaria decurrens* Bory. *Current Research on Biosciences and Biotechnology*, 4(1), 238–241. <https://doi.org/10.5614/crbb.2022.4.1/x7dd09ry>
- Sami, F. J., Soekamto, N. H., Firdaus, dan Latip, J. (2019a). Total Phenolic , Antioxidant Activity and Toxicity Effect of *Turbinaria decurrens* Extracts from South Sulawesi. *Journal of Physics: Conference Series*, 1341(3), 1–5. <https://doi.org/10.1088/1742-6596/1341/3/032008>
- Sami, F. J., Soekamto, N. H., Firdaus, dan Latip, J. (2019b). Uji Aktivitas Antioksidan Ekstrak Alga Coklat *Sargassum polycystum* dan *Turbinaria deccurens* Asal Pulau Dutungan Sulawesi Selatan terhadap Radikal DPPH. *Jurnal Kimia Riset*, 4(1), 1–6. <https://doi.org/10.20473/jkr.v4i1.10903>
- Sari, I. (2015). The Characterization of Simplisia, Isolation and Identifiacation of Chemical Constituens from Thallus *Turbinaria decurrens* Bory. *Jurnal Natural*, 15(2), 18–27.
- Sarita, I. D. A. A. D., Subrata, I. M., Sumaryani, N. P., dan Rai, I. G. A. (2021). Identifikasi Jenis Rumput Laut yang terdapat pada Ekosistem Alami Perairan Nusa Penida. *Jurnal Edukasi Matematika dan Sains*, 10(1), 141–154.
- Sasya, N. M., dan Sudarlin. (2024). Studi Komputasi Modifikasi 3-Pyropheophorbide α Menggunakan Atom Pusat Mg dan Pemanfaatannya sebagai Sensitizer pada Dye Sensitized Solar Cell (DSSC). *Indonesian Journal of Mathematics and Natural Sciences*, 47(2), 66–73.

- Saunders, G. W., dan Kucera, H. (2010). An Evaluation of rbcL, tufA, UPA, LSU and ITS as DNA Barcode Markers for The Marine Green Macroalgae. *Cryptogamie, Algologie*, 31(4), 487–528.
- Saunders, G. W., dan Moore, T. E. (2013). Refinements for the amplification and sequencing of red algal DNA barcode and RedToL phylogenetic markers: A summary of current primers, profiles and strategies. *Algae*, 28(1), 31–43. <https://doi.org/10.4490/algae.2013.28.1.031>
- Setyawati, R., dan Zubaidah, S. (2021). Optimasi Konsentrasi Primer dan Suhu Annealing dalam Mendeteksi Gen Leptin pada Sapi Peranakan Ongole (PO) Menggunakan Polymerase Chain Reaction (PCR). *Indonesian Journal of Laboratory*, 4(1), 36–40. <https://doi.org/10.22146/ijl.v4i1.65550>
- Silaban, R., Souisa, F. N. J., Dobo, J., Watubun, S., Sudirjo, F., dan Silubun, D. T. (2024). Keanekaragaman dan Pemanfaatan Makroalga di Perairan Pulau Rumadan Dullah Utara Kota Tual. *Rekayasa*, 17(3), 387–398. <https://doi.org/10.21107/rekayasa.v17i3.27255>
- Sjafaraenan, Lolodatu, H., Johannes, E., Agus, R., dan Sabran, A. (2018). Profil DNA Gen Follicle Stimulating Hormone Reseptor (FSHR) pada Wanita Akne Dengan Teknik PCR dan Sekuensing DNA. *Bioma : Jurnal Biologi Makassar*, 3(1), 1–11. <https://doi.org/10.20956/bioma.v3i1.3909>
- Subari, A., Razak, A., dan Sumarmin, R. (2021). Phylogenetic Analysis of *Rasbora* spp. Based on the Mitochondrial DNA COI gene in Harapan Forest. *Jurnal Biologi Tropis*, 21(1), 89–94. <https://doi.org/10.29303/jbt.v21i1.2351>
- Susilowati, R., dan Januar, H. I. (2014). Variasi Temporal dan Stabilitas Fisik dan Kimia Senyawa Bioaktif Karotenoid Rumput Laut Coklat *Turbinaria decurrens*. *Jurnal Pascapanen dan Bioteknologi Kelautan dan Perikanan*, 9(1), 21–28. <https://doi.org/10.15578/jpbkp.v9i1.96>
- Tambunan, G. G., Fachrezi, M. A., Qisthi, N. M., Ifada, M. T., Putri, S. K., Karo, R., dan Sitepu, K. (2024). Analisis Daya Saing Ekspor Rumput Laut Indonesia ke China dan Korea Selatan. *PPIMAN*, 2(3), 31–41. <https://doi.org/10.59603/ppiman.v2i3.392>
- Theowidavitya, B., Muttaqin, M., Miftahudin, dan Tjahjoleksono, A. (2019). Metabolomics Analysis on the Interaction of Rice and Bacteria. *Jurnal Sumberdaya Hayati*, 5(1), 18–24. <http://biologi.ipb.ac.id/jurnal/index.php/jsdhyati>
- Tindi, M., Mamangkey, N. G. F., dan Wullur, S. (2017). DNA Barcode dan Analisis Filogenetik Molekuler Beberapa Jenis Bivalvia Asal Perairan Sulawesi Utara Berdasarkan Gen COI. *Jurnal Pesisir dan Laut Tropis*, 1(2), 32–38. <https://doi.org/10.35800/jplt.5.2.2017.15050>
- Waruwu, M., Pu`at, S. N., Utami, P. R., Yanti, E., dan Rusydiana, M. (2025). Metode

Penelitian Kuantitatif: Konsep, Jenis, Tahapan dan Kelebihan. *Jurnal Ilmiah Profesi Pendidikan*, 10(1), 917–932. <https://doi.org/10.29303/jipp.v10i1.3057>

Yanuarti, R., Septiana, D. C., Nurfitriyana, Pratama, G., Haryati, S., Kurniawan, I. D., dan Putri, D. K. (2022). Antioxidant Activity and Physical Stability of *Turbinaria decurrens* and Kencur (*Kaempferia galanga*) Seaweed Porridge Body Scrub Preparations. *Jurnal Pengolahan Hasil Perikanan Indonesia*, 25(3), 364–372. <https://doi.org/10.17844/jphpi.v25i3.41669>

Zuccarello, G. C., dan Paul, N. A. (2019). A Beginner's Guide to Molecular Identification of Seaweed. *Squalen Bulletin of Marine and Fisheries Postharvest and Biotechnology*, 14(1), 43–53. <https://doi.org/10.15578/squalen.v14i1.384>

