

DAFTAR PUSTAKA

- Ács, K., Balázs, V. L., Kocsis, B., Bencsik, T., Böszörményi, A., and Horváth, G. 2018. Antibacterial Activity Evaluation Of Selected Essential Oils In Liquid And Vapor Phase On Respiratory Tract Pathogens. *BMC Complementary and Alternative Medicine*, **18**(1): 1–9.
- Aliagiannis, N., Kalpoutzakis, E., Mitaku, S., and Chinou, I. B. 2001. Composition and Antimicrobial Activity of the Essential Oils of Two *Origanum* species. *Journal of Agricultural and Food Chemistry*, **49**(9): 4168–4170.
- Amin, N. E. D., Abdallah, I. S., Elallawy, T., and Ahmed, S. M. 1985. Motile *Aeromonas* Septicaemia among *Tilapia nilotica* (*Sarotherodon niloticus*) in Upper Egypt. *Fish Pathology*, **20**: 93–97.
- Andrews, J. M. 2001. Determination of Minimum Inhibitory Concentrations. *Journal of Antimicrobial Chemotherapy*, **48**: 5–16.
- Angka, S. L. 1990. The Pathology of the Walking Catfish, *Clarias batrachus* (L.), Infected Intraperitoneally with *Aeromonas hydrophila*. *Asian Fisheries Science*, **3**: 343–351.
- Aoki, T., Egusa, S., Ogata, Y., and Watanabe, T. 1971. Detection of Resistance Factors in Fish Pathogen *Aeromonas liquefaciens*. *Journal of General Microbiology*, **65**(3): 343–349.
- Arboleda, C. R. 1981. Communications Research. CFA.
- Arguelles, E. D. L. R., Monsalud, R. G., and Sapin, A. B. 2019. Chemical Composition and In Vitro Antioxidant and Antibacterial Activities of *Sargassum vulgare* c. Agardh from Lobo, Batangas, Philippines. *Journal of the International Society for Southeast Asian Agricultural Sciences*, **25**(1): 112–122.
- Arwin, M., Ijong, F. G., and Tumbol, R. 2016. Characteristics of *Aeromonas hydrophila* Isolated from *Tilapia* (*Oreochromis niloticus*). *Aquatic Science & Management*, **4**(2): 52.
- Austin, B. 2011. Taxonomy of Bacterial Fish Pathogens. *Veterinary Research*, **42**(1): 1–13.
- Bannai, M. A. A., Kenani, A. J. K. A., Al Shammari, N. A. H., Al-Nagar, G., and Mustafa, F. 2020. Isolation and Treatments of *Aeromonas hydrophila* and *Staphylococcus lentus* Implicated in the Seasonal Autumn Mortalities of Farm-Raised *Cyprinus carpio*, Basrah Governorate, Iraq. *Journal of Physics: Conference Series*, **1660**(1): 1–7.
- Bauer, A. W., Kirby, W. M. M., Sherris, J. C., and Turck, M. 1966. Antibiotic Susceptibility Testing by a Standardized Single Disk Method. *The American Journal of Clinical Pathology*, **45**(4): 493–496.
- Belkacemi, L., Belalia, M., Djendara, A., and Bouhadda, Y. 2020. Antioxidant and

- Antibacterial Activities and Identification of Bioactive Compounds of Various Extracts of *Caulerpa racemosa* from Algerian coast. *Asian Pacific Journal of Tropical Biomedicine*, **10**(2): 87–94.
- Bian, F., Kandou, F. E. F., and Rumondor, M. J. 2015. Daya Hambat Ekstrak Etanol *Schismatoglottis* sp. Terhadap Bakteri *Staphylococcus aureus* dan *Escherichia coli*. *Jurnal Ilmiah Sains*, **15**(2): 149–153.
- Bintang, Y. E. F., Listiowati, E., Kasprijo, and Dadiono, M. S. 2024. Perendaman Ekstrak Daun Sirih Terhadap Nilai Kelulushidupan dan Profil Darah Ikan Nila (*Oreochromis niloticus*). *Jurnal MAIYAH*, **3**(3): 163–173.
- Brooks, G. F., Butel, J. S., and Morse, S. A. 2008. Jawetz, Melnick, & Adelberg's Medical Microbiology, 23 Ed. in dr. R. N. Elferia, dr. D. Ramadhani, dr. S. Karolina, dr. F. Indriyani, dr. S. S. P. Rianti, & dr. P. Yulia (Eds.), *Mikrobiologi kedokteran* (alih bahas, p. 862). Kedokteran EGC.
- Bryan, T., Defny, W., and Erladys, R. 2024. Uji Aktivitas Antibakteri Ekstrak Alga *Halimeda opuntia* dari Perairan Desa Poopoh Kabupaten Minahasa Terhadap Pertumbuhan Bakteri *Pseudomonas aeruginosa* dan *Staphylococcus aureus*. *PHARMACON*, **13**(1): 507–514.
- Caruso, D., Estevez, L. L., Marodon, C., and Sarter, S. 2024. Four Powdered Plants for Prevention of *Aeromonas hydrophila* Disease in Nile tilapia (*Oreochromis niloticus*). *Bulletin of the European Association of Fish Pathologists*, **44**(1): 0–12.
- Charoendat, U., Khongsai, S., Vittaya, L., and Tep-ubon, C. 2019. Antibacterial Activity of *Caulerpa racemosa* var. *corynephora* Crude Extracts against Pathogenic Bacteria of Aquatic Animals. *Recent Science and Technology*, **11**(1): 30–40.
- Cipriano, R. C., Bullock, G. L., and Pyle, S. W. 1984. *Aeromonas Hydrophila* and Motile Aeromonad Septicemias of Fish. In *University of Nebraska, Lincoln* (pp. 1–23). US Fish & Wildlife Publications.
- Citarasu, T. 2010. Herbal Biomedicines: A New Opportunity for Aquaculture Industry. *Aquaculture International*, **18**(3): 403–414.
- Citarasu, T., Alfred Dhas, K., Velmurugan, S., Thanga Viji, V., Kumaran, T., Michael Babu, M., and Selvaraj, T. 2011. Isolation of *Aeromonas hydrophila* from Infected Ornamental Fish Hatchery During Massive Disease Outbreak. *International Journal of Cyrrrent Research*, **2**(1): 37–41.
- Cockerill, F. R., Wikler, M. A., Alder, J., Dudley, M. N., Eliopoulos, G. M., Ferraro, M. J., Hardy, D. J., Hecht, D. W., Hindler, J. A., Patel, J. B., Powell, M., Swenson, J. M., Thomson Jr., R. B., Traczewski, M. M., Turnidge, J. D., Weinstein, M. P., and Zimmer, B. L. 2012. Performance Standards for Antimicrobial Disk Susceptibility Tests: Approved Standard (11th ed., Vol. 32, Issue 1). Clinical and Laboratory Standards Institute.
- Cushnie, T. P. T., and Lamb, A. J. 2005. Antimicrobial Activity of Flavonoids. *International Journal of Antimicrobial Agents*, **26**(5): 343–356.
- Damayanti, E., Chandra, A. B., and Hafiludin. 2024. Aktivitas Antioksidan

- Anggur Laut (*Caulerpa* sp.) dari Pulau Sapudi dengan Metode Pengeringan Berbeda. *JUVENIL: Jurnal Ilmiah Kelautan Dan Perikanan*, **5**(2): 162–171.
- Danata, R. H., and Yamindago, A. 2014. Analisis aktivitas antibakteri ekstrak daun mangrove *Avicennia marina* dari Kabupaten Trenggalek dan Kabupaten Pasuruan terhadap pertumbuhan *Staphylococcus aureus* dan *Vibrio alginolyticus*. *Jurnal Kelautan: Indonesian Journal of Marine Science and Technology*, **7**(1): 12–19.
- Daris, U. S., Syam, H., and Sukainah, A. 2023. Uji Daya Hambat serta Penentuan Minimum Inhibitor Concentration (MIC) Dan Minimum Bactericidal Concentration (MBC) Ekstrak Daun Bidara Terhadap Bakteri Patogen. *Jurnal Pendidikan Teknologi Pertanian*, **9**(2): 223–234.
- Davis, W. W., and Stout, T. R. 1971. Disc Plate Method of Microbiological Antibiotic Assay, I. Factors Influencing Variability and Error. *Applied Microbiology*, **22**(4): 659–665.
- Dewick, P. M. 2002. Alkaloids. In *Medicinal Natural Products* (Vol. 6). John Wiley & Sons, Ltd.
- Divyagnaneswari, M., Christyapita, D., and Michael, R. D. 2008. Immunomodulatory Activity of *Solanum trilobatum* Leaf Extracts in *Oreochromis mossambicus*. In *Diseases in Asian Aquaculture* (6th ed., pp. 221–234).
- Duc, P. M., Tuan, T. N., and Hatai, K. 2013. *Aeromonas hydrophila* Infection in Fingerlings of Snakehead *Channa striata* in Vietnam. *The Japanese Society of Fish Patholog*, **48**(2): 48–51.
- Ear, C., Sookying, S., Kannika, K., Suwannapoom, C., and Panase, P. 2024. Positive Effects of *Andrographis paniculata* Extract on Growth Performance, Haematology, Serum Biochemistry, Organosomatic Indices and Resistance Against *Aeromonas hydrophila* in Hybrid Catfish (*Clarias macrocephalus* × *Clarias gariepinus*). *Journal of Applied Animal Research*, **52**(1): 1–14.
- Emilia, I., Setiawan, A. A., Novianti, D., Mutiara, D., and Rangga. 2023. Skrining Fitokimia Ekstrak Daun Sungkai (*Peronema canescens* Jack.) secara Infundasi dan Maserasi. *Jurnal Indobiosains*, **5**(2): 95–102.
- Esteve, C., Alcaide, E., and Blasco, M. D. 2012. *Aeromonas hydrophila* Subsp. *Dhakensis* Isolated From Feces, Water and Fish in Mediterranean Spain. *Microbes and Environments*, **27**(4): 367–373.
- Esteve, C., Biosca, E., and Amaro, C. 1993. Virulence of *Aeromonas hydrophila* and Some Other Bacteria Isolated From European Eels *Anguilla anguilla* Reared in Fresh Water. *Diseases of Aquatic Organisms*, **16**(1991): 15–20.
- Farhadi, F., Khameneh, B., Iranshahi, M., and Iranshahy, M. 2019. Antibacterial Activity of Flavonoids and Their Structure–Activity Relationship: An Update Review. *Phytotherapy Research*, **33**(1): 13–40.
- Fernández-Bravo, A., and Figueras, M. J. 2020. An Update on The Genus *Aeromonas*: Taxonomy, Epidemiology, and Pathogenicity. *Microorganisms*

8(1).

- Fithriani, D. 2015. Opportunities and Challenges for Developing *Caulerpa racemosa* as Functional Foods. *KnE Life Sciences*, **1**: 96.
- Geofani, C., Dianita, P. S., and Septianingrum, N. M. A. N. 2022. Literature Review: Efektivitas Daya Hambat Antibakteri Tanaman Mengkudu (*Morinda citrifolia* L.) terhadap *S.aureus* dan *E.coli*. *Borobudur Pharmacy Review*, **2**(2): 36-49.
- Guz, L., and Kozińska, A. 2004. Antibiotic Susceptibility of *Aeromonas hydrophila* and *A. sobria* Isolated from Farmed Carp (*Cyprinus carpio* L.). *Bulletin of the Veterinary Institute in Pulawy*, **48**(4): 391-395.
- Haenen, O. 2017, April 10. Major Bacterial Diseases Affecting Aquaculture. *FAO: Aquatic AMR Workshop*, **1**: 1-30.
- Hainil, S., Sammulia, S. F., and Adella, A. 2022. Aktivitas Antibakteri *Staphylococcus aureus* dan *Salmonella thypi* Ekstrak Metanol Anggur Laut (*Caulerpa racemosa*). *Jurnal Surya Medika*, **7**(2): 86-95.
- Handa, S. S., Khanuja, S. P. S., Longo, G., and Rakesh, D. D. 2008. An Overview of Extraction Techniques for Medicinal and Aromatic Plants. In *Extraction Technologies for Medicinal and Aromatic Plants* (pp. 1-260). International Centre for Science and High Technology.
- Hanson, L. A., Hemstreet, W. G., and Hawke, J. P. 2019. Motile *Aeromonas* Septicemia (MAS) in Fish. *Southern Regional Aquaculture Center*, **478**: 1-5.
- Hanson, L. A., Liles, M. R., Hossain, M. J., Griffin, M. J., and Hemstreet, W. G. 2014. Motile *Aeromonas* Septicemia. In *FHS blue book: suggested procedures for the detection and identification of certain finfish and shellfish pathogens*. AFS-FHS (American Fisheries Society-Fish Health Section).
- Harborne, J. B. 1993. Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants. In *Phytochemical Methods: A Guide to Modern Techniques of Plant Analysis* (3rd ed., pp. 1-302). Chapman & Hall.
- Harikrishnan, R., and Balasundaram, C. 2005. Modern Trends in *Aeromonas hydrophila* Disease Management with Fish. *Reviews in Fisheries Science*, **13**(4): 281-320.
- Hazen, T. C., Fliermans, C. B., Hirsch, R. P., and Esch, G. W. 1978. Prevalence and Distribution. *Microbiology*, **36**(5): 731-738.
- Hettiarachchi, D. C., and Cheong, C. H. 1994. Some Characteristics of *Aeromonas hydrophila* and *Vibrio* species Isolated From Bacterial Disease Out-. *Journal of the National Science Foundation of Sri Lanka*, **22**(3): 261-269.
- Husein, S., Samor, V. A., Lestari, Y. E., and Nurkhalika, R. 2023. Pengaruh Penggunaan Antibiotik di Fasilitas Kesehatan (FasKes) terhadap Kualitas Air Perairan Umum: Studi Potensi Cemarkan Antibiotik. *Jurnal Farmasi Malahayati*, **6**(2): 168-180.
- Hutasuhut, D. A., Aspriyanto, D., and Firdaus, I. W. A. K. 2022. Uji Fitokimia

- Kualitatif dan Kuantitatif Ekstrak Kulit Buah Rambai (*Baccaurea motleyana*) Konsentrasi 100%. *Dentin Jurnal Kedokteran Gigi*, **6**(2): 97–102.
- Ibrahim, M., Mostafa, M., Arab, R. M., and Rezk, M. 2008. Prevalence of *Aeromonas Hydrophila* Infection in Wild and Cultured Tilapia Nilotica (*O. niloticus*). *8th International Symposium on Tilapia in Aquaculture*, : 1257–1271.
- IDRC, T. I. D. R. C., and UNDP. 1982. Fish Quarantine and Fish Diseases in Southeast Asia. IDRC.
- Jain, A., and Parihar, D. K. 2018. Antibacterial, Biofilm Dispersal and Antibiofilm Potential of Alkaloids and Flavonoids of *Curcuma*. *Biocatalysis and Agricultural Biotechnology*, **16**: 677–682.
- Jeeva, S., Antonisamy, J. M., Domettala, C., Anantham, B., and Mahesh, M. 2012. Preliminary Phytochemical Studies on Some Selected Seaweeds from Gulf of Mannar, India. *Asian Pacific Journal of Tropical Biomedicine*, **2**: 530–533.
- Joseph, S. W., and Carnahan, A. 1994. The Isolation, Identification, and Systematics of the Motile *Aeromonas* species. *Annual Review of Fish Diseases*, **4**(C): 315–343.
- Jumsurizal, Ilhamdy, A. F., Anggi, and Astika. 2021. Karakteristik Kimia Rumput Laut Hijau (*Caulerpa racemosa* & *Caulerpa taxifolia*) Dari Laut Natuna, Kepulauan Riau, Indonesia. *Jurnal Akuatika Indonesia*, **6**(1): 19–24.
- Kandhasamy, M., and Arunachalam, K. D. 2008. Evaluation of in Vitro Antibacterial Property of Seaweeds of Southeast Coast of India. *African Journal of Biotechnology*, **7**(12): 1958–1961.
- Karthikaidevi, G., Manivannan, K., Thirumaran, G., Anantharaman, P., and Balasubaramanian, T. 2009. Antibacterial Properties of Selected Green Seaweeds from Vedalai Coastal Waters; Gulf of Mannar Marine Biosphere Reserve. *Global Journal of Pharmacology*, **3**(2): 107–112.
- Katuuk, R. H. H., Wanget, S. A., and Tumewu, P. 2019. Pengaruh Perbedaan Ketinggian Tempat terhadap Kandungan Metabolit Sekunder pada Gulma Babadotan (*Ageratum conyzoides* L.). *Jurnal COCOS*, **1**(4): 1–6.
- Khieokhajonkhet, A., Suwannalers, P., Aeksiri, N., Ratanasut, K., Chitmanat, C., Inyawilert, W., Phromkunthong, W., and Kaneko, G. 2023. Effects of Dietary Red Pepper Extracts on Growth, Hematology, Pigmentation, Disease Resistance, and Growth- and Immune-Related Gene Expressions of Goldfish (*Carassius auratus*). *Animal Feed Science and Technology*, **301**.
- Khumaidi, A., and Hidayat, A. 2018. Identification of Causes of Mass Death of Gurami Fish (*Osphronemus gouramy*) In Gurami Fish Cultivation Sentra, Desa Beji, Kedung Banteng. *Journal of Aquaculture Science*, **3**(2): 145–153.
- Kristanti, A. N., Aminah, N. S., Tanjung, M., and Kurniadi, B. 2008. Buku Ajar Fitokimia. Airlangga University Press.
- Kumar, A., Krishnamoorthy, E., Devi, H. M., Uchoi, D., Tejpal, C. S., Ninan, G., and Zynudheen, A. A. 2017. Influence of Sea Grapes (*Caulerpa racemosa*)

- Supplementation on Physical, Functional, and Anti-Oxidant Properties of Semi-Sweet Biscuits. *Journal of Applied Phycology*, **30**(2): 1393–1403.
- Kumar, V., Das, B. K., Swain, H. S., Chowdhury, H., Roy, S., Bera, A. K., Das, R., Parida, S. N., Dhar, S., Jana, A. K., and Behera, B. K. 2022. Outbreak of *Ichthyophthirius multifiliis* Associated with *Aeromonas hydrophila* in *Pangasianodon hypophthalmus*: The Role of Turmeric oil in Enhancing Immunity and Inducing Resistance Against Co-Infection. *Frontiers in Immunology*, 1–19.
- Kusdarwati, R. 2019. Bakteri Virulensi *Aeromonas hydrophila* Sebabkan Kematian Ikan. *Unairnews*, .
- Larsen, J. L., and Jensen, N. J. 1977. An *Aeromonas* Species Implicated in Ulcer-Disease of the Cod (*Gadus morhua*). *Nordisk Veterinaermedicin*, **29**: 199–211.
- Liu, D. Q., Mao, S. C., Zhang, H. Y., Yu, X. Q., Feng, M. T., Wang, B., Feng, L. H., and Guo, Y. W. 2013. Racemosins A and B, Two Novel Bisindole Alkaloids From The Green Alga *Caulerpa racemosa*. *Fitoterapia*, **91**: 15–20.
- Luhulima, A., Niwele, A., and Kadimas, S. S. 2022. Jurnal Rumpun Ilmu Kesehatan Uji Aktivitas Antibakteri Ekstrak Etanol 70 % Anggur Laut (*Caulerpa racemosa*) Terhadap Bakteri *Staphylococcus aureus* Dengan Menggunakan Metode Difusi. *Jurnal Rumpun Ilmu Kesehatan*, **2**(1): 170–179.
- Lukistyowati, I., and Kurniasih. 2012. Pelacakan Gen Aerolysin dari *Aeromonas hydrophila* pada Ikan Mas yang Diberi Pakan Ekstrak Bawang Putih. *Jurnal Veteriner*, **13**(1): 43–50.
- Madhuri, S., Mandloi, A. K., Govind, P., and Sahni, Y. P. 2012. Antimicrobial Activity of Some Medicinal Plants Against Fish Pathogens. *International Research Journal of Pharmacy*, **3**(4): 28–30.
- Manik, V. T. 2013. Identifikasi dan Filogenetika Bakteri *Aeromonas* spp. Isolate Air Kolam Beberapa Kota Berdasarkan Pada Sikuen Gen 16S rRNA. *Universitas Pendidikan Indonesia*.
- Marfuah, I., Dewi, E. N., and Rianingsih, L. 2018. Kajian Potensi Ekstrak Anggur Laut (*Caulerpa racemosa*) Sebagai Antibakteri Terhadap Bakteri *Escherichia coli* dan *Staphylococcus aureus*. *Jurnal Pengolahan Dan Bioteknologi Hasil Perikanan*, **7**(1): 7–14.
- Maulianawati, D., and Suharni, S. 2022. Antibacterial Activity of *Nephrolepis biserrata* Extract Against *Aeromonas hydrophila* and *Vibrio parahaemolyticus*. *IOP Conference Series: Earth and Environmental Science*, **1033**(1).
- Meyer, F. P. 1991. Aquaculture Disease and Health Management. *Journal of Animal Science*, **69**(10): 4201–4208.
- Mittal, K. R., Lalonde, G., Leblanc, D., Olivier, G., and Lallier, R. 1980. *Aeromonas hydrophila* in Rainbow Trout: Relation Between Virulence and Surface Characteristics. *Canadian Journal of Microbiology*, **26**(12): 1501–1503.
- Moubayed, N. M. S., Al Hourri, H. J., Al Khulaifi, M. M., and Al Farraj, D. A. 2017.

- Antimicrobial, Antioxidant Properties and Chemical Composition of Seaweeds Collected from Saudi Arabia (Red Sea and Arabian Gulf). *Saudi Journal of Biological Sciences*, **24**(1): 162–169.
- Muslikha, Pujiyanto, S., Jannah, S. N., and Novita, H. 2016. Isolasi, Karakterisasi *Aeromonas hydrophila* dan Deteksi Gen Penyebab Penyakit *Motile Aeromonas Septicemia* (MAS) dengan 16s rRna dan Aerolysin pada Ikan Lele (*Clarias* sp.). *Jurnal Biologi*, **5**(4): 1–7.
- Nagaraj, S. R., and Osborne, J. W. 2014. Bioactive Compounds From *Caulerpa racemosa* as a Potent Larvicidal and Antibacterial Agent. *Frontiers in Biology*, **9**(4): 300–305.
- Nya, E. J., and Austin, B. 2009. Use of Dietary ginger, *Zingiber officinale* Roscoe, as an Immunostimulant to Control *Aeromonas hydrophila* Infections in Rainbow Trout, *Oncorhynchus mykiss* (Walbaum). *Journal of Fish Diseases*, **32**(11): 971–977.
- Odeyemi, O. A., Asmat, A., and Usup, G. 2012. Antibiotics Resistance and Putative Virulence Factors of *Aeromonas hydrophila* Isolated From Estuary. *Journal of Microbiology*, **9**(6): 1339–1357.
- Oktavianus, S. 2013. Uji Daya Hambat Ekstrak Daun Mangrove Jenis *Avicennia marina* Terhadap Bakteri *Vibrio*. *Universitas Hasanuddin*.
- Palaniyappan, S., Sridhar, A., Kari, Z. A., Téllez-Isaías, G., and Ramasamy, T. 2023. Evaluation of Phytochemical Screening, Pigment Content, In Vitro Antioxidant, Antibacterial Potential and GC-MS Metabolite Profiling of Green Seaweed *Caulerpa racemosa*. *Marine Drugs*, **21**(5): 1–23.
- Panche, A. N., Diwan, A. D., and Chandra, S. R. 2016. Flavonoids: An overview. *Journal of Nutritional Science*, **5**.
- Patel, P., Wermuth, H. R., Calhoun, C., and Hall, G. A. 2023. Antibiotics. *Treasure Island (FL): StatPearls Publishing*, .
- Pattipeilohy, C. E., Tuhumury, S. F., and Rijoly, S. M. A. 2023. Aktivitas Antibakteri Anggur Laut *Caulerpa racemosa* Terhadap Beberapa Jenis Bakteri Pada Ikan Budidaya. *TRITON: Jurnal Manajemen Sumberdaya Perairan*, **19**(1): 1–8.
- Pękala-Safińska, A. 2018. Contemporary Threats of Bacterial Infections in Freshwater Fish. *Journal of Veterinary Research (Poland)*, **62**(3): 261–267.
- Pelu, A. D., Lihi, M., and Wokas, M. N. I. 2022. Uji Aktivitas Antifungi Ekstrak Anggur Laut (*Caulerpa* sp.) Asal Pulau Geser Kabupaten Seram Bagian Timur Terhadap Fungi *Candida albicans*. *Jurnal Ilmu Kedokteran Dan Kesehatan Indonesia*, **2**(2): 153–163.
- Pereira, A. G., Oliveira, P. G., Cassani, L., and Otero, P. 2023. Plant Alkaloids: Production, Extraction, and Potential Therapeutic Properties. In *Natural Secondary Metabolites: From Nature, Through Science, to Industry* (Issue February, pp. 157–200). Cham: Springer International Publishing.

- Pratiwi, A. F., Satyantini, W. H., Mahasri, G., Mukti, A. T., and Isnansetyo, A. 2022. The Administration of *Caulerpa racemosa* Extract in Feed of Whiteleg Shrimp (*Litopenaeus vannamei*) After Infected by *Vibrio parahaemolyticus*. *Journal of Aquaculture and Fish Health*, **11**(2): 193–200.
- Pratiwi, S. A., Februyani, N., and Basith, A. 2023. Skrining dan Uji Penggolongan Fitokimia dengan Metode KLT pada Ekstrak Etanol Kemangi (*Ocimum basilicum* L) dan Sereh Dapur (*Cymbopogon ciratus*). *Pharmacy Medical Journal*, **6**(2): 2023.
- Qomaliyah, E. N., Indriani, N., Rohma, A., and Islamiyati, R. 2023. Skrining Fitokimia, Kadar Total Flavonoid dan Antioksidan Daun Cocor Bebek. *Current Biochemistry*, **10**(1): 1–10.
- Ragunath, C., Kumar, Y. A. S., Kanivalan, I., and Radhakrishnan, S. 2020. Phytochemical Screening and GC-MS Analysis of Bioactive Constituents in the Methanolic Extract of *Caulerpa racemosa* (Forssk.) j. agardh and *padina boergesenii* allender & kraft. *Current Applied Science and Technology*, **20**(3): 380–393.
- Rahim, Z., and Aziz, K. M. S. 1994. Enterotoxigenicity, Hemolytic Activity and Antibiotic Resistance of *Aeromonas* Spp. Isolated from Freshwater Prawn Marketed in Dhaka, Bangladesh. *Microbiology and Immunology*, **38**(10): 773–778.
- Rahman, T., Akanda, M. M. R., Rahman, M. M., and Chowdhury, M. B. R. 2009. Evaluation of The Efficacies of Selected Antibiotics and Medicinal Plants on Common Bacterial Fish Pathogens. *Journal of the Bangladesh Agricultural University*, **7**(1): 163–168.
- Rahmi, N., Wulandari, P., and Advinda, L. 2022. Pengendalian Cemaran Mikroorganisme pada Ikan, Mini Review. In *Prosiding Seminar Nasional Biologi*, **1**(2): 611–623.
- Ramadhani, D. E., Grasilla, D. M., Mulanti, R., Permana, S. D., Rafi, M., Fadilah, S. Z., Fahrezy, R. A., Kautsar, M. A., Anjani, R. D., Maula, A., Fauziah, S. S., Hafid, M. E., and Nurrafa, N. W. 2024. Efektivitas Kunyit, Kencur, Daun Jambu Biji, Daun Ketapang Dan Kayu Manis Untuk Menghambat Pertumbuhan Bakteri Patogen *Aeromonas hydrophila*. *Jurnal Sains Terapan : Wahana Informasi Dan Alih Teknologi Pertanian*, **14**(1): 19–30.
- Ríos, J. L., and Recio, M. C. 2005. Medicinal Plants and Antimicrobial Activity. *Journal of Ethnopharmacology*, **100**(1): 80–84.
- Ritan, Y. E. H., Wewengkang, D. S., and Siampa, J. P. 2021. Uji Aktivitas Antibakteri Ekstrak Dan Fraksi Alga *Caulerpa racemosa* Dari Perairan Pulau Mantehage Minahasa Utara Terhadap Pertumbuhan Bakteri *Escherichia Coli* dan *Staphylococcus Aureus* Bacteria. *PHARMACON: Jurnal Ilmiah Farmasi – UNSRAT*, **10**(2): 905–911.
- Rohmatika, F., Asih, E. N. N., Mardiyanti, Y., and Ni'amah, S. N. 2024. Potensi Ekstrak Dan Skrining Fitokimia *Caulerpa* sp. Sebagai Antibakteri *Vibrio*

- parahaemolyticus* dari Perairan Socah, Bangkalan-Madura. *Jurnal Perikanan Unram*, **13**(4): 1138–1149.
- Rusli, A., Metusalach, Tahir, M. M., Salengke, and Syamsuar. 2016. Analysis of Bioactive Compounds of *Caulerpa racemosa*, *Sargassum* sp. and *Gracillaria verrucosa* Using Different Solvents. *Jurnal Teknologi*, **78**(4–2): 15–19.
- Saavedra, M. J., Guedes-novais, S., Alves, A., Rema, P., Tacão, M., and Correia, A. 2004. Resistance to β -lactam Antibiotics in *Aeromonas hydrophila* Isolated From Rainbow Trout (*Oncorhynchus mykiss*). *International Microbiology*, **7**: 207–211.
- Saputro, M. U. A., Dewi, E. N., and Purnamayati, L. 2023. Pengaruh Perbedaan Metode Ekstraksi Rumput Laut *Caulerpa* sp. Terhadap Kualitas Masker Wajah. *Jurnal Ilmu Dan Teknologi Perikanan*, **5**(1): 37–43.
- Saragih, D. E., and Arsita, E. V. 2019. The Phytochemical Content of *Zanthoxylum acanthopodium* and its Potential as a Medicinal Plant in the Regions of Toba Samosir and North Tapanuli, North Sumatra. *Prosiding Seminar Nasional Masyarakat Biodiversitas Indonesia*, **5**(1): 71–76.
- Sari, E. M., Maruf, W. F., and Sumardianto, Sumardianto. 2014. Kajian Senyawa Bioaktif Ekstrak Teripang Hitam (*Holothuria edulis*) Basah dan Kering Sebagai Antibakteri Alami. *Jurnal Pengolahan Dan Bioteknologi Hasil Perikanan*, **3**(4): 16–24.
- Sari, N. I., Patang, P., and Indrayani, I. 2022. Pengaruh Pemberian Ekstrak Anggur Laut (*Caulerpa racemosa*) Dalam Menghambat Infeksi Bakteri *Aeromonas hydrophila* Pada Ikan Nila (*Oreochromis niloticus*). *Jurnal Pendidikan Teknologi Pertanian*, **8**(2): 235–248.
- Sarkar, M. J. A., and Rashid, M. M. 2012. Pathogenicity of the Bacterial Isolate *Aeromonas hydrophila* to Catfishes, Carps, and Perch. *Journal of the Bangladesh Agricultural University*, **10**(1): 157–161.
- Semwal, A., Kumar, A., and Kumar, N. 2023. A Review on Pathogenicity of *Aeromonas hydrophila* and Their Mitigation Through Medicinal Herbs in Aquaculture. *Heliyon*, **9**(3).
- Shalaby, A. M., Khattab, Y. A., and Abdel Rahman, A. M. 2006. Effects of Garlic (*Allium sativum*) and Chloramphenicol on Growth Performance, Physiological Parameters and Survival of Nile tilapia (*Oreochromis niloticus*). *Journal of Venomous Animals and Toxins Including Tropical Diseases*, **12**(2): 172–201.
- Sharma, A., Deo, A. D., Tandel Riteshkumar, S., Chanu, T. I., and Das, A. 2010. Effect of *Withania Somnifera* (L. Dunal) Root as a Feed Additive on Immunological Parameters and Disease Resistance to *Aeromonas hydrophila* in Labeo Rohita (Hamilton) Fingerlings. *Fish and Shellfish Immunology*, **29**(3): 508–512.
- Soelama, H. J. J., Kepel, B. J., and Siagian, K. V. 2015. Uji Minimum Inhibitory Concentration (MIC) Ekstrak Rumput Laut (*Eucheuma cottonii*) Sebagai

- Antibakteri Terhadap *Streptococcus mutans*. *Jurnal E-GIGI*, **3**(2): 374–379.
- Stratev, D., and Odeyemi, O. A. 2016. Antimicrobial Resistance of *Aeromonas hydrophila* Isolated From Different Food Sources: A Mini-Review. *Journal of Infection and Public Health*, **9**(5): 535–544.
- Stratev, D., and Odeyemi, O. A. 2017. An Overview of Motile *Aeromonas* Septicaemia Management. *Aquaculture International*, **25**(3): 1095–1105.
- Sujuliyani, Thaib, E. A., Indriati, N., and Liananda, M. 2019. Antibacterial Activity of the Symbiotic Bacteria of Green Algae *Caulerpa racemosa* from Pulau Lima Indonesia. *IOP Conference Series: Earth and Environmental Science*, **278**(1).
- Susilowati, A., Mulyawan, A. E., and Putri, T. W. 2019. Antioxidant Activity of the Sea Grape (*Caulerpa racemosa*) as a Lotion. *Oriental Journal Of Chemistry*, **35**(4): 1443–1447.
- Syahidah, A., Saad, C. R., Daud, H. M., and Abdelhadi, Y. M. 2015. Status and Potential of Herbal Applications in Aquaculture: A Review. *Iranian Journal of Fisheries Sciences*, **14**(1): 27–44.
- Tamokou, J. de D., Mbaveng, A. T., and Kuete, V. 2017. Antimicrobial Activities of African Medicinal Spices and Vegetables. *Medicinal Spices and Vegetables from Africa: Therapeutic Potential Against Metabolic, Inflammatory, Infectious and Systemic Diseases* (pp. 207–237). Academic Press.
- Tjandra, R. F., Fatimawali, ., and Datu, O. S. 2020. Analisis Senyawa Alkaloid dan Uji Daya Hambat Ekstrak Buah Sirih (*Piper betle* L.) terhadap Bakteri *Staphylococcus epidermidis*. *Jurnal E-Biomedik*, **8**(2): 173–179.
- Uddin, S. A., Akter, S., Hossen, S., and Rahman, M. 2020. Antioxidant, Antibacterial and Cytotoxic Activity of *Caulerpa racemosa* (Forsskål) J. Agardh and *Ulva* (Enteromorpha) intestinalis L. *Bangladesh Journal of Scientific and Industrial Research*, **55**(4): 237–244.
- Ulkhaq, M. F., Budi, D. S., and Rahayu, N. N. 2020. The Effect of Temperature, Salinity and Antimicrobial Agent on Growth and Viability of *Aeromonas hydrophila*. *IOP Conference Series: Earth and Environmental Science*, **441**(1): 1–5.
- Utomo, D. S., Kristiani, E. B. E., and Mahardika, A. 2020. The Effect of Growth Location on Flavonoid, Phenolic, Chlorophyll, Carotenoid and Antioxidant Activity Levels in Horse Whip (*Stachytarpheta Jamaicensis*). *Bioma*, **22**(2): 143–149.
- Valgas, C., De Souza, S. M., Smânia, E. F. A., and Smânia, A. 2007. Screening Methods to Determine Antibacterial Activity of Natural Products. *Brazilian Journal of Microbiology*, **38**(2): 369–380.
- Velavan, S. 2015. Phytochemical Techniques - A Review. *World Journal of Science and Research*, **1**(2): 80–91.
- Vifta, R. L., and Advistasari, Y. D. 2018. Skrining Fitokimia, Karakterisasi, dan Penentuan Kadar Flavonoid Total Ekstrak dan Fraksi-Fraksi Buah Parijoto

- (*Medinilla speciosa* B.). *Prosiding Seminar Nasional Unimus*, **1**: 8–14.
- Viruly, L., Anggi, Jumsurizal, and Muhazar. 2024. Pemanfaatan Rumput Laut *Caulerpa racemosa* Sebagai Bahan Baku Masker Wash-Off Dengan Penambahan Peptida Siput Gonggong. *JPHPI*, **27**(10): 917–931.
- Wiegand, I., Hilpert, K., and Hancock, R. E. W. 2008. Agar and Broth Dilution Methods to Determine the Minimal Inhibitory Concentration (MIC) of Antimicrobial Substances. *Nature Protocols*, **3**(2): 163–175.
- Wiyanto, D. B. 2010. Uji Aktivitas Aantibakteri Ekstrak Rumput Laut *Kappaphycus alvarezii* Dan *Eucheuma denticullatum* Terhadap Bakteri *Aeromonas hydrophila* dan *Vibrio harveyii*. *Jurnal Kelautan*, **3**(1): 1–17.
- Yasa, J. D. M., and Jacob, J. M. 2024. Analisis Metabolit Sekunder Daun *Brucea javanica* [L] Merr dari Dua Tempat Berbeda di Pulau Timor. *Jurnal Kajian Veteriner*, **12**(1): 85–93.
- Yassin, S., Abubker, M., Mohamed, A., Omer, S., Humeada, S., Ahmed, E. M. M., and Alrahman, M. A. 2022. Antibacterial, Antioxidant Activities and GC-MS Analysis of *Dichrostachys cinera* (L.) Ethanolic Leaves Extract. *Pharmacology & Pharmacy*, **13**: 545–557.
- Yilmaz, E., Tasbozan, O., and Erbas, C. 2018. Potential of Medical Herbal Products to be Used in Aquaculture. *Eastern Anatolian Journal of Science*, **VI**(2): 16–23.
- Yudasmara, G. A. 2015. Budidaya Anggur Laut (*Caulerpa racemosa*) melalui Media Tanam Rigid Quadrant Nets Berbahan Bambu. *JST (Jurnal Sains Dan Teknologi)*, **3**(2).
- Zega, A., Susanti, N. M., Tillah, R., and Laoli, D. 2024. Innovative Strategies in the Face of Ecosystem Degradation : An Updated Assessment Of The Vital Role of Mangrove Forests. *Environmental Conservation*. **2**(2): 71–83.
- Zhang, M., Han, W., Gu, J., Qiu, C., Jiang, Q., Dong, J., Lei, L., and Li, F. 2022. Recent Advances on the Regulation of Bacterial Biofilm Formation by Herbal Medicines. *Frontiers in Microbiology*, **13**: 1–17.
- Zmysłowska, I., Korzekwa, K., and Szarek, J. 2009. *Aeromonas hydrophila* in Fish Aquaculture. *Journal of Comparative Pathology*, **141**(4): 313.