DAFTAR PUSTAKA

Afif, S., Fasya, A. G., & Ningsih, R. (2015). Extraction, Toxicity Assay and Identification of Active Compounds of Red Algae (Eucheuma cottonii) from Sumenep Madur. ALCHEMY: Journal of Chemistry 4(2), 101-106.

Afrianto E, Evi Liviawaty, Otong Suhara, & Herman Hamdani. (2010). Pengaruh Suhu dan Lama Blansing Terhadap Penurunan Kesegaran Filet Tagih Selama Penyimpanan Suhu Rendah. Jurnal Akuatika. Vol. V No.1, hlm:45-54.

Al-Kshab, A. A., & Fathi, O. Q. (2021). Determination of the Lethal Concentration 50% (LC50) of Lead Chloride and its Accumulation in Different Organs of Gambusia Affinis fish. Iraqi Journal of Veterinary Sciences 35(2), 361-367.

Altemimi, A., Lakhssassi, N., Baharlouei, A., Watson, D. G., & Lightfoot, D. A. (2017). Phytochemicals: Extraction, Isolation, and Identification of Bioactive Compoundsfrom Plant Extracts. Plants 6(42), 1-23.

Amaliya, R.R. & W.D.R. Putri. (2014). Karakteristik Edible Film dari Pati Jagung dengan Penambahan Filtrat Kunyit Putih sebagai Antibakteri. Jurnal Pangan dan Agroindustri; 2(3):43-53.

Andhan, S. & Sornakumari, H. (2011). Bio restraining potentials of marine macro algae collected from Rameshwaram, Tamilnadu. J. of Res in Biol., 5,385-392

Arbenz, A., & Avérous, L. (2015). Oxyalkylation of Gambier Tannin—Synthesis and Characterization of Ensuing Biobased Polyols. Industrial Crops and Products 67, 295-304.

Asaduzzaman, M., Rana, D. M. S., Hasan, S. M. R., Hossain, M. M., & Das, N. (2015). Cytotoxic (Brine Shrimp Lethality Bioassay) and Antioxidant Investigation of Barringtonia acutangula (L.). International Journal of Pharma Sciences and Research 6(8), 1179-1185.

Astarina, Astuti, & Warditiani (2013). SKRINING FITOKIMIA EKSTRAK METANOL RIMPANG BANGLE (Zingiber purpureum Roxb.) Jurnal Farmasi Udayana, 1-6.

Astawan, Made & Andreas Leomitro Kasih. (2008). Khasiat Warna-Warni Makanan. Jakarta: Gramedia.

Azizah, N. (2017). *Analisis Faktor Nyeri Otot Rangka (Musculoskeletal Disorders) pada Tenaga Kerja Bagian Penenunan di Industri Tenun Lurik Kurnia, Sewon, Bantul*. KTI Jurusan Kesehatan Lingkungan Poltekkes Kemenkes Yogyakarta.

Badan Pusat Statistik. (2017). *Rata-Rata Konsumsi per Kapita Seminggu Beberapa Macam Bahan Makanan Penting, 2007-2017*. Diakses pada 1 Juni 2018, dari

https://www.bps.go.id/statictable/2014/09/08/950/rata-ratakonsumsi-per-kapita-seminggu-beberapa-macam-bahan-makanan-penting2007-2017.html.

Bansemir, A., Blume, M., Schröder, S., & Lindequist, U. (2006). Screening of Cultivated Seaweeds for Antibacterial Activity Against Fish Pathogenic Bacteria. Aquaculture 252, 79-84.

Basir, A., Tarman, K., & Desniar. (2017). Aktivitas Antibakteri dan Antioksidan Alga Hijau Halimeda gracilis dari Kabupaten Kepulauan Seribu. Masyarakat Pengolahan Hasil Perikanan Indonesia 20(2), 211-218.

Batt, C.A. & Tortorello, M.-L. (2014). *Encyclopedia Food Microbiology* II., USA: Elsevier

Beltran-Perez, O. D., Berrio-Giraldo, L.-I., Agudelo, E.-A., Santiago-Alonso, and Cardona-Gallo. (2020). Toxicity Test for Fuller's Earth Contaminated with Dielectric Oil Using Eisenia Foetida Earthworms and Soils with Different Carbon Contents. Universidad Nacional de Colombia 87(215), 186-192.

Bertelloni, F., Cilia, G., & Fratini, F. (2020). Bacteriostatic and Bactericidal Effect of Tigecycline on Leptospira spp. Antibiotics 9(467), 1-7.

Bouhlal,R., Hassane, R., Martinez, J & Bourgougnon, N. (2010). *The Antibacterial potentials of seaweeds (Rhodophycea)of the strait of Gibraltar and the Mediterranean Coast of Morocco. African J. of Biotechnol*. Vol: 7 1952-1961

Bonang, G., M., Lintong, & Santoso, U.S. (1974).The isolation and susceptibility to various antimicrobial agents of *Vibrio parahaemolyticus* from acute gastroenteritis cases and from sea food in Jakarta. In T. Fugino, R. Sakaguchi, and V. Takeda (ed.), Simposium Internasional Vibrio parahaemolyticus. *Publikasi Saikon Co.* Tokyo. Bribi, N. (2018). Herbal Medicine in Pharmaceutical and Clinical Sciences. Asian Journal of Botany.

Burgess, E. R., King, B. H., & Geden, C. J. (2020). Oral and Topical Insecticide Response Bioassays and Associated Statistical Analyses Used Commonly in Veterinary and Medical Entomology. Journal of Insect Science 20(6), 1-9.

Carballo, J.L. (2002). *A Comparison Between Two Brine Shrimp Assays to Detect In Vitro Cytotoxicity in Marine Natural Products*. BMC Biotechnology.

Chan, T. F., & Vese, L. A. (2013). *Active Contour Without Edges*. IEEE Transaction on Image Processing Vol.10 No.2, 266 – 277.

Chander, M.P., Veeraragavam, S., & Vijayachari, P. (2014). *Antimicrobial and Hemolytic activity of seaweed Padina gymnospora from South Andaman, Andaman and Nicobar Islands of India Int Jour*. Curr . Microbiol. App Sci . Vol : 3,364-369

Chung, K. T., Liu, Z., & Chou, M. W. (1998). Mechanism of Inhibition of Tannic Acid and Related Compounds on the Growth of Intestinal Bacteria. Food and Chemical Toxicology 36.

Crowley, D., Penk, M. R., Macaulay, S. J., & Piggott, J. J. (2021). Acute Toxicity of the Insecticide Cypermethrin to Three Common European Mayfly and Stonefly Nymphs Limnologica 88 (125871), 1-7.

Cushnie, T. P. T., & Lamb, A. J. (2005). Antimicrobial activity of flavonoids. International Journal of Antimicrobial Agents.

Darsana, I. G. O., Besung, I. N. K., & Mahatmi, H. (2012). Potensi Daun Binahong (Anredera Cordifolia (Tenore) Steenis) dalam Menghambat Pertumbuhan Bakteri Escherichia Coli. Indonesia Medicus Veterinus 1(3), 337-351.

Datu, S. S. (2017). *Skrining Antibakteri Ekstrak Sargassum Sp. Terhadap Bakteri Vibrio Parahaemolyticus Dan Vibrio Harveyi.* Skripsi. Makassar: Universitas Hasanuddin

Deepa, S., Venkateshwaran, P., Vinithkumar, N. V., & Kirubagaran, R. (2017). Bioactive Propensity of Macroalgae from the Andaman & Nicobar Islands. Pharmacogn J 9(6), 815-820.

Departemen Kesehatan RI. (2000). *Parameter Standar Umum Ekstrak Tumbuhan Obat, Cetakan Pertama*, 3-11, 17-19, Dikjen POM, Direktorat Pengawasan Obat Tradisional.

Dewi, F.K. (2010). Aktivitas Antibakteri Ekstrak Etanol Buah Mengkudu (Morinda citrifolia, Linnaeus) terhadap Bakteri Pembusuk Daging Segar, Skripsi, Universitas Sebelas Maret.

Dewiningsih, K., Ita, W., & Wilis, A. S. (2017). Skrining Aktivitas Antibakteri Pada Ekstrak Metanol Jaringan Lunak Kerang Darah *(Anadara granosa)* Terhadap Bakteri *Vibrio harveyi. Jurnal Enggano* 2(2):229–38

Dotulong, Jendra F.J, Margareth R. S, Grace D. & Kandou. (2016). *Hubungan Faktor Risiko Umur, Jenis Kelamin dan Kepadatan Hunian dengan Kejadian Penyakit TB Paru di Desa Wori Kecamatn Wori. Jurnal Kedokteran Komunitas dan Tropik*. 3(2), pp.59-63.

Dwijendra, I., Defny, S.T., & Frenly, W. (2014). Aktivitas Antimikroba dan Karakterisasi Senyawa Fraksi Spons Lamellodysidea herbacea yang Diperoleh dari Teluk Manado. Jurnal Ilmiah Farmasi. 3(4) : 1-2.

Edison, Diharmi, A., Ariani, N. M., & Ilza, M. (2020). Komponen Bioaktif dan Aktivitas Antioksidan Ekstrak Kasar Sargassum plagyophyllum. Jurnal Pengolahan Hasil Perikanan Indonesia 23(1), 58(66).

Edward III, & George C. (1980). I*mplementing Public Policy*. Washington DC: Congressional Quarterly Press.

Febles, C. I., Arias, A. & Gil-Rodriguez, M. C. (1995*). In vitro* study of antimicrobial activity in algae (Chlorophyta, Phaeophyta and Rhodophyta) collected from the coast of Tenerife (in Spanish). *Anuario del Estudios Canarios 34*, 181-192

Ferrer, L., Andrade, S., Asteasuain, R. l., & Marcovecchio, J. (2006). Acute Toxicities of Four Metals on the Early Life Stages of the Crab Chasmagnathus granulata from Bahı´a Blanca Estuary, Argentina. Ecotoxicology and Environmental Safety 65, 209-217.

Fraga-Corral, M., García-Oliveira, P., Pereira, A. G., Lourenço-Lopes, C., Jimenez-Lopez, C., Prieto, M. A., & Simal-Gandara, J. (2020). Technological Application of Tannin-Based Extracts Molecules 25(614), 1-27.

Gazali, M., Nurjanah., & N.P.Zamani. (2018). *Eksplorasi Senyawa Bioaktif Alga Cokelat Sargassum sp. Sebagai Antioksidan Dari Pesisir Barat Aceh*. Jurnal Pengolahan Hasil Perikanan Indonesia. Vol. 21, No.1: 167-178.

Harbone, J.B. (1987). Metode Fitokimia: penentuan Cara Modern Menganalisis Tumbuhan. Institut Teknologi Bandung.

Harborne, J.B. (1984). Metode Fitokimia Penuntun Cara Modern Menganalisa Tumbuhan. Penerjemah: Kosasih Padmawinata dan Iwang Soediro. Terbitan Kedua. Bandung: Penerbit ITB. Halaman 47-102, 152-153.

Hakim, A., Jufri, A. W., Jamaluddin, Hadisaputra, S., & Adawiyah, S. R. (2020). Natural Product Chemistry Laboratory: Isolation Phenobarbitone from Mangrove Bark (Avicennia marina). Creative Education 11(9).

Handayani, S. (2013). *Kandungan Flavonoid Kulit Batang Dan Daun Pohon Api-Api (Avicennia marina (Forks.) Vierh.) Sebagai Senyawa Aktif Antioksidan*. Skripsi. Bogor: Institut Pertanian Bogor

Hardyanti, F. (2011). *Komponen Bioaktif dan Aktivitas Antioksidan Anemon Laut (Stichodactyla gigantean).* Skripsi. Bogor: Institut Pertanian Bogor

Harmita, & Radji, M. (2008). Buku Ajar Analisis Hayati, Edisi 3, pp. 125-9, Penerbit Buku Kedokteran EGC, Jakarta

Haryani. (2012). *Hubungan Karakteristik, Tingkat Konsumsi Energi, Tingkat Konsumsi Protein, dan Frekuensi Periksa Kehamilan dengan Penambahan Berat Badan Ibu*

Hashim, N. H., Mohamat-Yusuff, F., Joni, A. A., Kusin, F. M., Mohamed, K. N., Zulkeflee, Z., Asha'ari, Z. H., & Zulkifli, S. Z. (2020). Determination of Median Lethal Concentration (LC50) and Nitrite Accumulation in the Blood and Tissue of Blood Cockle (Tegillarca granosa, Linnaeus 1758). Water 12(2197), 1-10.

Hatmanti, A. (2003). *Penyakit Bakterial Pada Budidaya Krustasea Serta Cara Penanganannya.* Oseana 3(3):1–10

Heinrich, Michael., Barnes, Joanne., Gibbons, Simon., Williamso, Elizabeth M. (2004). Fundamental of Pharmacognosy and Phytotherapi Hungary: Elsevier.

Hidayat, A. A. (2017). *Metodologi Penelitian Keperawatan dan Kesehatan (A. Suslia & T. Utami, eds.).* Penerbit Salemba Medika.

Iffah, L., Abdullah, M. F., & Aini, Y. N. (2018). *Persepsi Nasabah Terhadap Tingkat Kualitas Pelayanan Bank Syariah Cabang Malang*. Fallah Jurnal Ekonomi Syariah, 3.

Isohood, J.H. & M. Drake. (2002). *Review: Aeromonas species in foods.* J Food Prot 65: 575-582

Ivanovic, S., Avramovic, N., Dojˇcinovic, B., Trifunovic, S., Novakovic, M., Teševic, V., & Mandic, B. (2020). Chemical Composition, Total Phenols and Flavonoids Contents and Antioxidant Activity as Nutritive Potential of Roasted Hazelnut Skins (Corylus avellana L.). Foods 9(430), 1-14.

Jawetz, E., Melnick, J.L., & Adelberg, E.A. 2001. *Mikrobiologi Kedokteran.* EGC Penerbit Buku Kedokteran, Jakarta, 753 hlm.

Juang, Y.-P., & Liang, P.-H. (2020). Biological and Pharmacological Effects of Synthetic Saponins. Molecules 25(4974).

Kabata, Z. (1985). P*arasites and Disease of Fish Cultured in the Tropics.* London and Philadelphia: Taylor and Fancis Press.

Kandhasamy, M. & K.D. Arunachalam. (2008). Evaluation of in vitro Antibacterial Property of Seaweeds of Southeast Coast of India. African Journal of Biotechnology. 7(12): 1958- 1961.

Karthidevi, G., Manivannan, K., Thirumaran, G., Anantharaman, P. & Balasubramanian, T. (2009). *Antibacterial properties of selected green seaweeds from Vedalai coastal waters; Gulf of Mannar Marine Biosphere Reserve*. Global J. of Pharmacol.

Kharisma, Adnan., & M, Abdul. (2012). *Kelimpahan bakteri Vibrio sp. pada air pembesaran udang vannamei (Litopenaeus vannamei) sebagai deteksi dini serangan penyakit vibriosis.* Jurnal Ilmiah Perikanan Dan Kelautan, 4: (2). Universitas Airlangga.

Kordi, K. M. G. H. (2010). *Budidaya ikan lele di kolam terp*al. Andi. Yogyakarta. Hal. 1-22.

Kumar, C.S., Ganesan, P., Suresh, P.V. & Bhaskar, N. (2008). Seaweeds as a source of nutritionally beneficial compounds—a review. Jour. Food Sci. Technol., 45, 1-13.

Christobel, G. J., Lipton, A. P., Aishwarya, M. S., Sarika, A. R., & Udayakumar, A. (2011). Antibacterial Activity of Aqueous Extract from Selected Macroalgae of Southwest Coast of India. Seaweed Res. Utiln., 33 (1&2), 67 – 75.Gf

Lenny, S. & Cut, F. Z. (2005). *Isolasi dan Uji Bioaktivitas Kandungan Kimia Utama Puding Merah (Graptophyllum pictum L. Griff) Dengan Metode Uji Brine Shrimp.* Jurnal Komunikasi Penelitian 17(5):56–59

Lestari, Y., Puji, A. & Nurlina. (2016). Aktivitas Antibakteri Gram positif dan Negatif Dari Ekstrak dan Fraksi Daun Nipah (*Nypa fruticans* Wurmb) Asal Pesisir Sungai Kakap Kalimantan Barat. *Jurnal Kimia Khatulistiwa* 5(4):1–8

Luthana, Y.K. (2008). *Yoghurt.* www.yoghurt«yis'sfoodentertaining.htm.

Maradona, D., (2013). *Uji Aktivitas Ekstrak Etanol Daun Durian (Durio zibethinus L.), Daun Lengkeng (Dimocarous longan Lour), Daun Rambutan (Nephelium lappaceum L) Terhadap Bakteri Stertococcus Aureus ATCC 25925 dan Escherichia Coli ATCC 25922.* Skripsi, Fakultas Kedoketarna dan Ilmu Kesehatan, UIN Syarif Hidayatullah Jakar.

Meneses, N. G. T., Martins, S., Teixeira, J. A., & Mussatto, S. I. (2013). Influence of extraction solvents on the recovery of antioxidant phenolic compounds from brewer's spent grains. Separation and Purification Technology 108, 152-158.

Merchant, I, A., & Parker R. A. (1961). *Veterinary Bacterial and Virology, 6th Edition, Lowa, Lowa State University Press.*

Mierziak, J., Kostyn, K., & Kulma, A. (2014). Flavonoids as Important Molecules of Plant Interactions with the Environment. Molecules 19, 16240-16265.

Mishra, K., Ojha, H. & Chaudhury, N.K., (2016). *Estimation of antiradical properties of antioxidants using DPPH Å assay: a critical review and results.* Food Chemistry, 130(4), pp.1036–1043.

Murwantoko, C. R. Handayani., & R. Pratiwi. (2013). *Cloning and Sequence Analysis of Capsid Protein Gene of Iridovirus Indonesian Isolates.* Indonesian Journal of Biotechnology. 4(1): 1117-1123.

Naczk, M., & Shahidi, F. (2004). Extraction and Analysis of Phenolics in Food. J Chromatogr A 29(1054), 95-111.

Negara, B. F. S. P., Sohn, J. H., Kim, J.-S., & Choi, J.-S. (2021). Effects of Phlorotannins on Organisms: Focus on the Safety, Toxicity, and Availability of Phlorotannins. Foods 10(452), 1-19.

Nemeth, h., Oesch, G., & Kuster, S. P. (2014). Bacteriostatic Versus Bactericidal Antibiotics for Patients with serious Bacterial Infections: Systematic Review and Meta-Analysis. Journal of Antimicrobial Chemotherapy 1-14.

Nerdy, N., Lestari, P., Sinaga, J. P., Ginting, S., Zebua, N. F., Mierza, V., & Bakri, T. K. (2021). Brine Shrimp (Artemia salina Leach.) Lethality Test of Ethanolic Extract from Green Betel (Piper betle Linn.) and Red Betel (Piper crocatum Ruiz and Pav.) through the Soxhletation Method for Cytotoxicity Tes. ournal of Medical Sciences 23(9), 407-412.

Nio, O.K. (1989). Zat-zat toksik yang secara alamiah ada pada bahan makanan nabati. http:/www.kable.co.id/files/cdk/files/58 10 zat zat toksikalamiah .pdf/58_10_zat-zattoksikalamiah.html.

Nurhayati. (2006). Kajian Pengaruh Kadar Gula dan Lama Fermentasi terhadap Kualitas Nata de Soya, Jurnal Matematika, Sains, dan Teknologi, 7, 40-47.

Nurjanah, Izzati, L., & Abdullah, A. (2011). Aktivitas Antioksidan dan Komponen Bioaktif Kerang Pisau (Sopen spp). Ilmu Kelautan UNDIP 16(3), 119-124.

Nurjanah, Nurilmala, M., Anwar, E., Luthfiyana, N., & Hidayat, T. (2017). Identification of Bioactive Compounds of Seaweed Sargassum sp. and Eucheuma cottonii Doty as a Raw Sunscreen Cream. Proceedings of the Pakistan Academy of Science 54(4), 311-318.

Nugroho, I.A. (2010). Lokakarya Nasional Tumbuhan Obat Indonesia. Edisi ke2. Apforgen. Bogor.

Opa, S., Robert, B., Grevo, G., Rizald, R., Rosita, L. & Deiske, S. 2018. Uji Aktivitas Antibakteri Fraksi N-Heksana, Metanol dan Air Dari Ascidian *Lissoclinum* sp. *Jurnal Pesisir Dan Laut Tropis* 6(1):69

Pagarra, H., Rahman, R. A., Muis, A., & Arifin, A. N. (2019). Screening of factors influencing Pectin Extraction of Pomelo peels using 2-Level Factorial Design IOP Conf. Series: Materials Science and Engineering 551, 1-7.

Pelczar, M. J. & Chan, E. C. S. (2005). “Dasar-dasar Mikrobiologi 1”, Alih bahasa: Hadioetomo, R. S., Imas, T., Tjitrosomo, S.S. dan Angka, S. L., UI Press, Jakarta.

Pertiwi, R. D., Suwaldi, Martien, R. & Setyowati, E. P. (2020). Radical Scavenging Activity and Quercetin Content of Muntingia calabura L. Leaves Extracted by Various Ethanol Concentration. Journal of Food and Pharmaceutical Sciences 8(2), 1-11.

Pratiwi. (2008). *Mikrobiologi Farmasi*. Jakarta: Erlangga.

Premarathna, A. D., Ranahewa, T. H., Wijesekera, S. K., Harishchandra, D. L., Karunathilake, K. J. K., Waduge, R. N., Wijesundara, R. R. M. K. K., Jayasooriya, A. P., Wijewardana, V., & Rajapakse, R. P. V. J. (2020). Preliminary Screening of the Aqueous Extracts of Twenty-Three Different Seaweed Species in Sri Lanka with In-Vitro and In-Vivo Assays. Heliyon 6, 1-16.

Pringgenies, D., N.L. Ekasari & Gunawan. (2011). Potensi Beberapa Ekstrak Rumput Laut sebagai Antibakteri Upaya Sebagai Bahan Antibakteri Makanan. Dalam: Prosiding Seminar Nasional Aplikasi Pemanfaatan Rumput Laut dan Bahan Hayati Laut dalam Bidang Pangan dan Energi di Semarang 29 Januari 2011. Semarang, 133-142 hlm.

Purwakusuma. (2002). *Evektivitas bunga kecombrang (Nicolaia speciosa horan) untuk pencegahan serangan saprolegnia sp. pada lele sangkuriang. Jurnal kelautan dan perikanan.* Vol 3. No.4:75-80.

Putri, H. L., Retnowati, R., & Suratmo. (2015). Fraksi n-heksana dari ekstrak Metanol daun Mangga Kasturi (Mangifera casturi Koesterm) dan Uji Fitokimia. Kimia Student Journal 1(1), 772-777.

Rahmawan. (2001). Prinsip Dasar Pengeringan. Jurusan Teknologi Industri Pertanian Bogor. IPB. Bogor.

Rezaei-Zarchi, S., Imani, S., Z, A. m., Saadati, M., & Zaghari, Z. (2021). Study of Bactericidal Properties of Carbohydrate-stabilized Platinum Oxide Nanoparticles. International Nano Letters 2(21), 1-5.

Sabir, A. (2005). Aktivitas Antibakteri Flavonoid Propolis Trigona sp Terhadap Bakteri Streptococcus mutans (in vitro). Maj. Ked. Gigi 38(3), 135-141.

Salem, W.M., Gala, H. & Nasr El-deen, F. (2011). *Screening for antibacterial activities in some marine algae from the red sea (Hurghada, Egypt)*. African J. of Microbiol. Res, 5, 2160-2167

Sambou, M., Jean-François, J., Moutombi, F. J. N., Doiron, J. A., Hébert, M. P. A., Joy, A. P., Mai-Thi, N.-N., Barnett, D. A., Surette, M. E., Boudreau, L. H., & Touaibia, M. (2021). Extraction, Antioxidant Capacity, 5-Lipoxygenase Inhibition, and Phytochemical Composition of Propolis from Eastern Canada. Molecules 25(10).

Sanger, G., Kaseger, B.E., Rarung, L.K., & Damongilala, L. (2018). *Potensi Beberapa Jenis Rumput Laut Sebagai Bahan Pangan Fungsional, Sumber Pigmen Dan Antioksidan Alami. J. Pengolahan Hasil Perikan*. Indo., 21(2):208-217. doi: 10.1784 4/jphpi. V21(2).208-217

Sedjati, S., Supriyantini, E., Ridlo, A., & Soenardjo, N. (2018). *Kandungan Pigmen Total Fenolik Dan Aktivitas Antioksidan*. Jurnal Kelautan Tropis. 21(2):137–144. doi : 10.14710/jkt.v21i2.3329

Segal, R., Shatkovsky, P., & Ilana-Milo-Goldzwh (1974). On The Mechanism of Saponin Hemolysis-I Hydrolysis of the Glycosidic Bond. Biochemical Pharmacology 23, 973-981.

Selim SA. (2012). Antimicrobial, Antiplasmid and Cytotoxicity Potentials of Marine Algae Halimeda opuntia and Sarconema Filiforme Collected from Red Sea Coast. World Academy of Science. Engineering and Technology Journal 2(1), 1154-1159

Setyaningsih, D., Anton, A., & Maya, P. S. Sar. M. P. (2010). *Analisis Sensori Untuk Industri Pangan Dan Agro*. in IPB Press. Bogor

Simorangkir, D., Masfria, M., Harahap, U., & Satria, D. (2019). Activity Anticancer n-hexane Fraction of Cyperus Rotundus l. Rhizome to Breast Cancer MCF-7 Cell Line. Herbal Medicine in Pharmaceutical and Clinical Sciences 7(22), 3904-3906.

Siregar T, Riyadi, & Nuraeni. (2014). *Budidaya Cokelat. Penebar Swadaya*. Jakarta. 172 hal.

Soekiman, S. (2016). *Infeksi Nosokomial Di Rumah Sakit-Hospital Nososcomial Infections. Pertama.* Edited by Mariyam. Surabaya: CV.Sagung Seto.

Supardy NA, Ibrahim D, Sulaiman SF, & Zakaria NA. (2011). *Free radical scavenging activity, total phenolic content and toxicity level of Halimeda discoidea extract (Malaysia's green macroalgae).* International Journal of Pharmacy and Pharmaceutical Sciences. 3(5): 397–402.

Syngai, G.G., Dey, S. & Bharali, R. (2016), "Evaluation of toxicity levels of the aqueous extract of Allium sativum and its effects on the behaviour of juvenile common carp (Cyprinus carpio, L 1758)", Asian Journal of Pharmaceutical and Clinical Research, 9(3), 417-421.

Taheri A. (2016). *Antioxidant activity in some Iranian seaweed species from Chabahar. Iranian Journal of Fisheries Sciences.* 15(2): 802–817.

Terblanche, Semakalu, Mtunzi, & Pillay. (2017). Screening of Variables Influencing Extraction Yield of Cotyledon orbiculata: 2 Full Factorial Design. 9(3), 303-312.

Tiwari, P., Bimlesh, K., Mandeep, K., Gurpreet, K., & Harleen, K. 2011. *USP18 Protects against Hepatic Steatosis and Insulin Resistance through Its Deubiquitinating Activity.* Internationale Pharmaceutica Sciencia 1(1):98–106.

Tzanova, M., Atanasov, V., Yaneva, Z., Ivanova, D., & Dinev, T. (2020). Selectivity of Current Extraction Techniques for Flavonoids from Plant Materials. Processes 8(10).

Valentina, J., Poonguzhali, T.V. & Josmin, L. N. L.L. (2015) Phytochemical Analysis of selected Seaweeds collected from Mandapam coast in Rameshwaram, Tamilnadu, India. Int. Jour. of AdvRes., 3, 972-976

Vinha, G. L., Plata-Rueda, A., Soares, M. A., Zanuncio, J. C., Serrão, J. E., & Martínez, L. C. (2021). Deltamethrin-Mediated Effects on Locomotion, Respiration,

Waghulde, S., Kale, M. K., & Patil, V. R. (2019). Brine Shrimp Lethality Assay of the Aqueous and Ethanolic Extracts of the Selected Species of Medicinal Plants.

Widowati, Lucie. (2005). *Kajian Hasil Penelitian Mahkota Dewa*. Jurnal bahan Alam Indonesia ISSN1412-2855 vol.4 No.1.

Wibowo, S. 2013. *Artemia*. Jakarta: Penebar Swadaya.

Wulandari, V., G.Latama, & E.N Zainuddin. (2019). *Antibacterial Activity of Sargassum polycystum and Ulva reticulata Methanol Extract Against Marine Fouling Bacteria.* International Journal of Scientific and Research Publications, Volume 9, Issue 7.

Xu, N. Fan X, Yan X, & Tseng C. K. (2004). Screening marine algae from China for their antitumor activities. Journal of Applied Phycology 16: DOI: 10.1007/s10811-005-5508-5. 451–456p.

Zainuddin, E. N. (2019). Antibacterial Potential of Marine Algae Collected from South Sulawesi Coast Against Human Pathogens. in *Proceedings of International Conference and Talk-show on Medicinal Plants.* BPPT, Jakarta, Indonesia

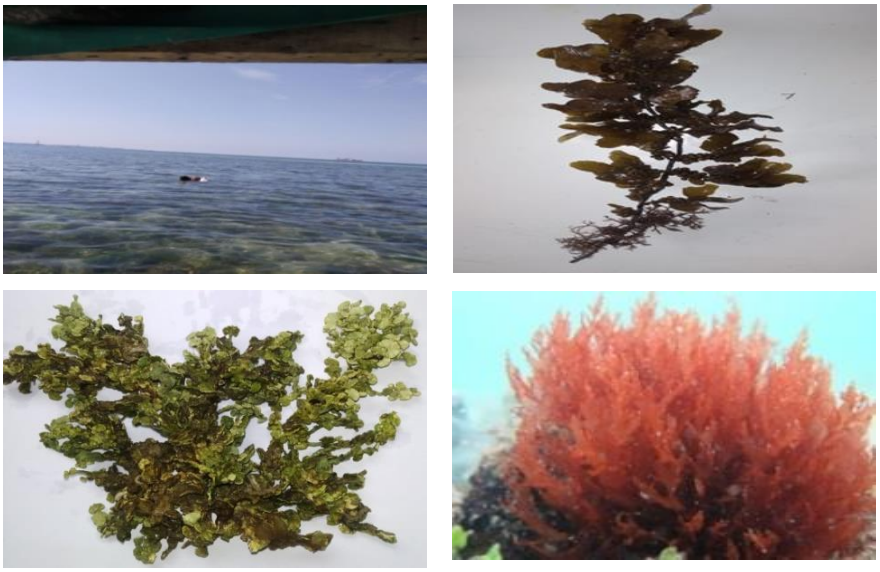
Xie, Y., Yang, W., Tang, F., Chen, X., & Ren, L. (2015). Antibacterial Activities of Flavonoids: Structure-Activity Relationship and Mechanism Current Medicinal Chemistry 22, 132-149.

Yadav, P., Kumar, A., Mahour, K., & Vihan, V. S. (2010). Phytochemical Analysis of Some Indigenous Plants Potent Against Endoparasite. Journal of Advanced Laboratory Research in Biology 1(1), 56-59.

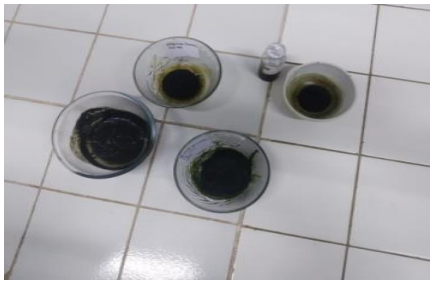
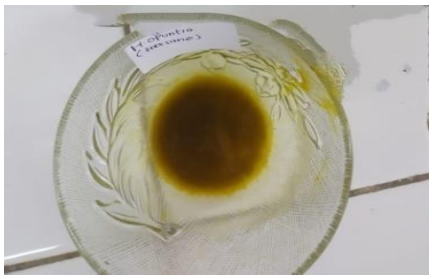
Yildiz, H. Y., Acikara, O. B., Eryilmaz, M., Ozbilgin, S., Ergene, B., & Iscan, G. S. (2019). Cytotoxic Activity of Solvent Extracts of Detrital Zostera spp. Leaves Collected from West Coast of Turkey. International Journal of Innovative Studies in Aquatic Biology and Fisheries 5(1), 7-11.

LAMPIRAN

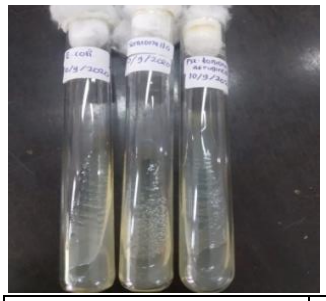
Lampiran 1. Pengambilan sampel rumput laut *S. cinctum*, *H. opuntia* dan *H.venusta* di perairan Pulau Lae Lae



Lampiran 2. Preparasi dan ekstraksi sampel

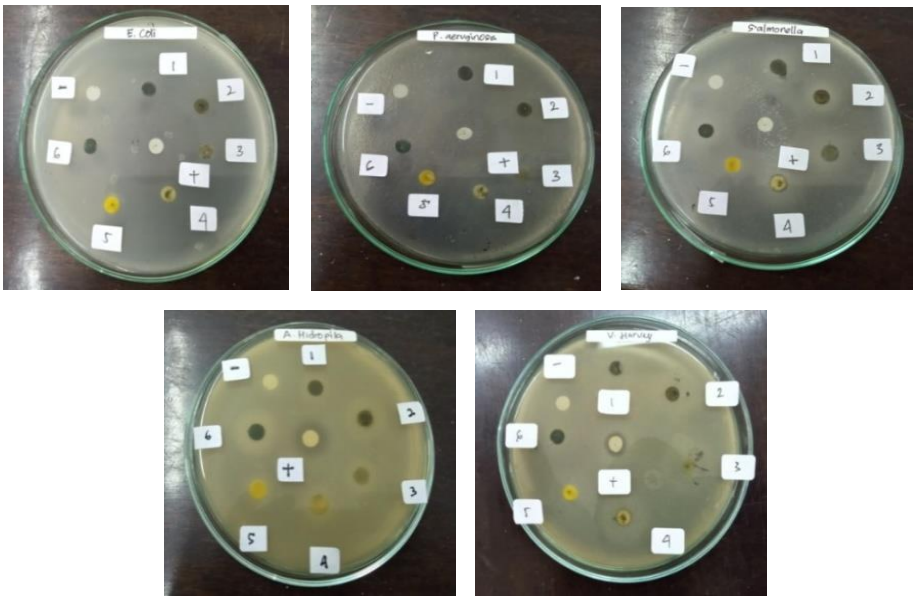




Lampiran 3. Hasil uji aktifitas bakteri ekstrak sampel



Jenis Ekstrak	Rata-Rata Diameter Zona Hambatan (mm) BAKTERI				
	E. coli	*P.aerugenosa*	*S. thypi*	*A. hidropila*	*V. harveyi*
S. cinctum (heksana)	0	0	25,67	09,82	12,05
S. cinctum (m*etanol*)	0	0	10,05	18,20	18,04
H. venusta(heksana)	0	0	13,02	12,16	21,00
H. venusta (m*etanol*)	0	0	17.34	11,49	18,04
H. opuntia (heksana)	0	0	07,03	09,25	16,01
H. opuntia(m*etanol*)	0	08,63	12,76	18,12	09,02

Ket: Zona bening menunjukkan sifat bakterisidal dan zona halo menunjukkan sifat bakteriostatis.



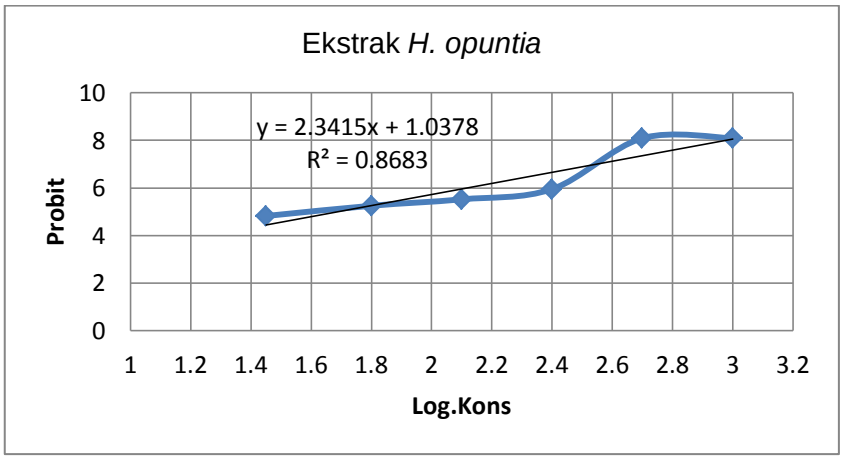
Ket: Zona bening menunjukkan sifat bakterisidal dan zona halo menunjukkan bakteriostatis

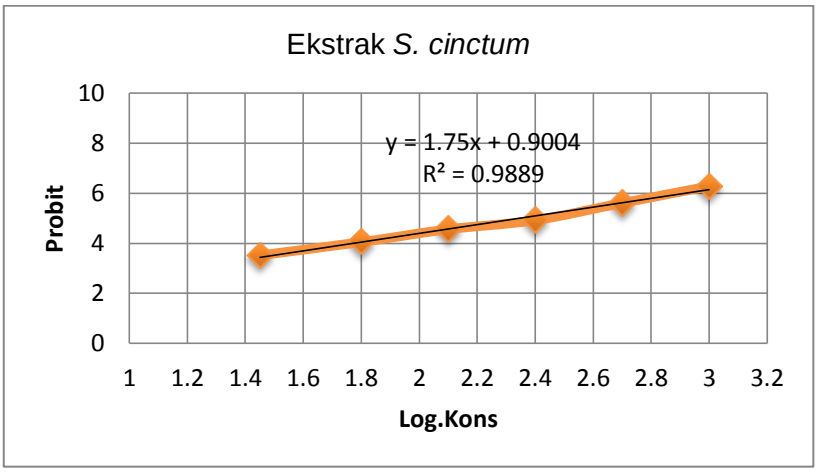
Lampiran 4. Pengujian toksisitas ekstrak sampel dan perhitungan nilai LC_{50} -24 jam

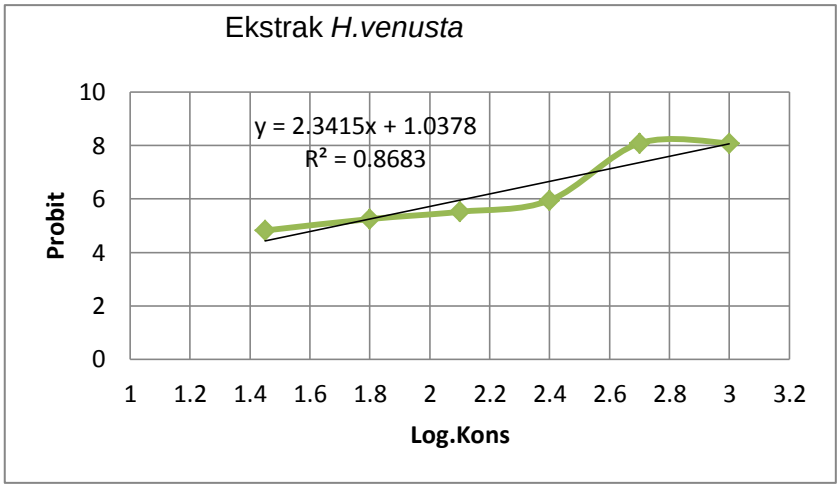
Ekstrak *H. venusta*											
No	**Kons (µ/ ml)**	**Log.Kons .**	**Ulangan 1**		**Ulangan 2**		**Ulangan 3**		**%Mati**	**% Terkoreksi**	**Probit**
			Mati	**Hidup**	**Mati**	**Hidup**	**Mati**	**Hidup**			
1	1000	3	10	0	10	0	10	0	100%	100%	8,09
2	500	2,7	10	0	10	0	10	0	100%	100%	8,09
3	250	2,4	10	0	8	2	7	3	83%	83%	5,95
4	125	2,1	8	2	9	1	9	2	87%	87%	6,13
5	62,6	1,8	8	2	7	3	4	6	63%	63%	5,33
6	31,24	1,45	0	10	5	5	4	6	30%	30%	4,48

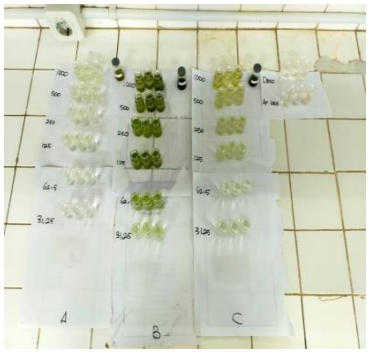
Ekstrak *S. cinctum*											
No	Kons (µ/ml)	Log.Kons.	**Ulangan 1**		**Ulangan 2**		**Ulangan 3**		**%Mati**	**% Terkoreksi**	**Probit**
			Mati	Hidup	Mati	Hidup	Mati	Hidup			
1	1000	3	9	2	8	2	10	0	90%	90%	6,28
2	500	2,7	9	2	5	5	8	2	73%	73%	5,61
3	250	2,4	3	7	4	6	3	7	33%	33%	4,56
4	125	2,1	4	6	5	5	5	5	47%	47%	4,92
5	62,6	1,8	1	9	2	8	0	10	10%	10%	3,72
6	31,24	1,45	3	7	1	9	0	10	13%	13%	3,87

Ekstrak *H. opuntia*											
No	**Kons (µ/ml)**	**Log.Kons.**	**Ulangan 1**		**Ulangan 2**		**Ulangan 3**		%Mati	% Terkoreksi	Probit
			Mati	Hidup	Mati	Hidup	Mati	Hidup			
1	1000	3	10	0	10	0	10	0	100%	100%	8,09
2	500	2,7	10	0	10	0	10	0	100%	100%	8,09
3	250	2,4	9	1	9	1	7	3	83%	83%	5,95
4	125	2,1	7	3	6	4	7	3	67%	67%	5,44
5	62,6	1,8	6	4	7	3	5	5	60%	60%	5,25
6	31,24	1,45	5	5	3	7	6	4	47%	47%	4,92







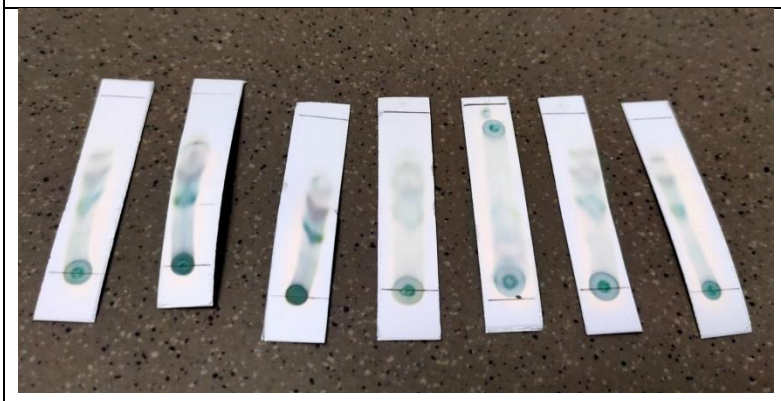
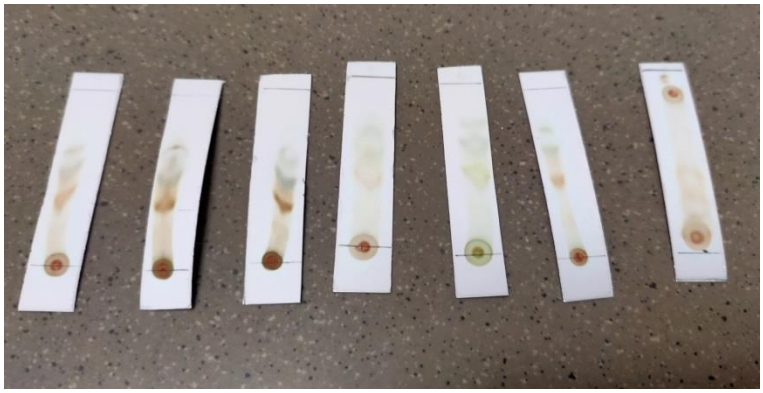


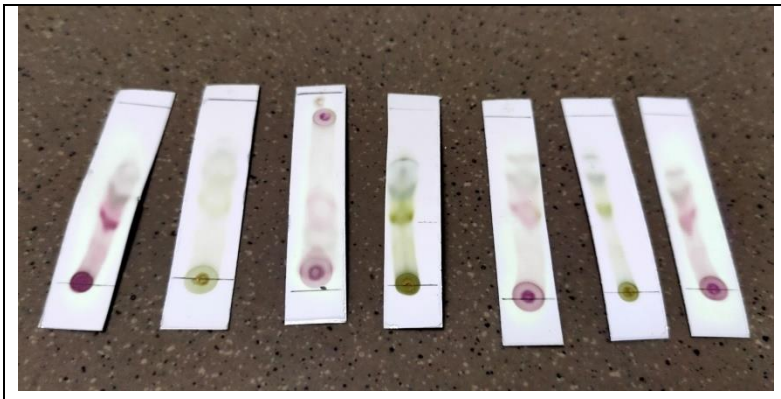
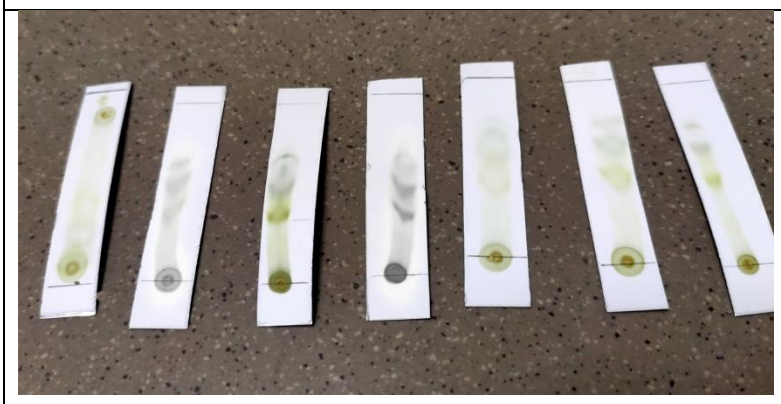
Harga probit sesuai prosetasenya

Prosentase	Probit									
	0	1	2	3	4	5	6	7	8	9
0	-	2,67	2,95	3,12	3,25	3,36	3,45	3,52	3,59	3,66
10	3,72	3,77	3,82	3,87	3,92	3,95	4,01	4,05	4,08	4,12
20	4,17	4,19	4,23	4,26	4,29	4,33	4,36	4,39	4,42	4,45
30	4,48	4,77	4,53	4,56	4,59	4,61	4,64	4,67	4,69	4,72
40	4,75	5,03	4,80	4,82	4,85	4,87	4,9	4,92	4,95	4,97
50	5,00	5,28	5,05	5,08	5,1	5,13	5,15	5,18	5,2	5,23
60	5,25	5,55	5,31	5,33	5,36	5,39	5,41	5,44	5,47	5,5
70	5,52	5,88	5,58	5,61	5,64	5,67	5,71	5,74	5,77	5,81
80	5,84	6,34	5,92	5,95	5,99	6,04	6,08	6,13	6,18	6,23
90	6,28	0,1	6,41	6,48	6,55	6,64	6,75	6,88	7,05	7,33
99	0	0.1	0,2	0,3	0,4	0,5	0,6	0,7	0,8	0,9
	7,33	7,37	7,41	7,46	7,51	7,58	7,66	7,75	7,88	8,09

Sumber: Mursyidi, A., (1984), “Farmasi Dan Biologi” Ghaliab Indonesia, Cetakan I Jakarta, 157

Lampiran 5. Kandungan senyawa bioaktif ekstrak metanol dan n-heksan *S. cinctum*, *H. opuntia* dan *H. venusta*

Dokumentasi Hasil Uji	Parameter
	Tanin
	Saponin
	Alkaloid

	Triterpenoid
	Flavonoid