

DAFTAR PUSTAKA

- Abed, S. A., Fanokh, A. K. M., & Mahood, A. M. (2019). Phytochemical identification and anti-oxidant study of essential oil constituents of *ocimum basilicum* L. Growing in Iraq. *Pharmacognosy Journal*, *11*(4), 724–729.
- Agarwal, C. (2013). An Analysis of Basil (*Ocimum* SP.) to Study the Morphological Variability. *Indian Journal of Fundamental and Applied Life Sciences*, *3*(3), 521–525. <http://www.cibtech.org/jls.htm>
- Ahmed, A. F., Attia, F. A. K., Liu, Z., Li, C., Wei, J., & Kang, W. (2019). Antioxidant activity and total phenolic content of essential oils and extracts of sweet basil (*Ocimum basilicum* L.) plants. *Food Science and Human Wellness*, *8*(3), 299–305.
- Ari, K., Darmapatni, G., Basori, A., Ni, D., & Suaniti, M. (2016). Pengembangan Metode GC-MS untuk Penetapan Kadar Acetaminophen pada Spesimen Rabut Manusia. *Jurnal Biosains Pascasarjana*, *18*(3), 64–66.
- Astuti, A. (2020). *Formulasi Serum Anti-Aging Minyak Atsiri Lada Hitam (Piper nigrum L.) dan Uji Aktivitas Antioksidan Menggunakan Metode DPPH* [Skripsi]. Universitas Islam Indonesia.
- Ayunani, T. D., Hastuti, I. T., Muhamad Ansory, H., & Nilawati, A. (2018). Sparation of 1,4-Terpineol and Safrol from Nutmeg Seed Essential Oil (*Myristica Fragrans* Houtt) And *Shigella dysenteriae* Bacteria Activity Test. *Jurnal Farmasi Indonesia*, *15*(1), 88–100. <http://setiabudi.ac.id/ejurnal/index.php/farmasi-indonesia>
- Baser, H. C. K., & Buchbauer, G. (2010). *Handbook of Essential Oils: Science, Technology, and Applications* (K. H. C. Baser & Buchbauer, Ed.). Taylor and Francis Group.
- Batista, F. L. A., Andrade-Pinheiro, J. C., dos Santos, A. T. L., Lima, J. N. M., Alencar, G. G., Siqueira, G. M., da Silva, A. R. P., de Carvalho, N. K. G., Martins, A. O. B. P. B., da Costa, R. H. S., Rodrigues, L. B., Coutinho, H. D. M., da Costa, J. G. M., Magalhães, F. E. A., & de Menezes, I. R. A. (2023). Comparative antimicrobial potential of *Ocimum basilicum* essential oil, estragole and estragole/ β -cyclodextrin complex in an infection model on adult zebrafish. *Carbohydrate Polymer Technologies and Applications*, *6*(1), 1–9.
- Bhernama, G. B. (2022). *Pemanfaatam Limbah Cangkang Biji Pala (Myristica fragransi) sebagai Membran Selulosa Asetat*.
- Bilal, A., Jahan, N., Ahmed, A., Naaz Bilal, S., Habib, S., & Hajra, S. (2012). Phytochemical and Pharmacological Studies on *Ocimum Basilicum* Linn-A Review. *IJCRR*, *4*(23), 73–83.
- Blainski, A., Lopes, G. C., & De Mello, J. C. P. (2013). Application and analysis of the folin ciocalteu method for the determination of the total phenolic content from *Limonium brasiliense* L. *Molecules*, *18*(6), 6852–6865.
- Cahyono, F. T. (2012). *Isolasi dan Karakterisasi Penyusun Minyak Atsiri Hasil Distilasi Uap Daun Legundi (Vitex trifolia) dengan Kromatografi Gas Spektrometer Massa (KG-SM)* [Skripsi]. Universitas Brawijaya.
- Chueca, B., Pagán, R., & García-Gonzalo, D. (2014). Differential mechanism of *Escherichia coli* inactivation by (+)-limonene as a function of cell physiological state and drug's concentration. *PLOS ONE*, *9*(4).

- Cömert, E. D., Mogol, B. A., & Gökmen, V. (2020). Relationship between color and antioxidant capacity of fruits and vegetables. *Current Research in Food Science*, 2, 1–10.
- Darjazi, B. B. (2011). A comparison of volatile components of flower of page mandarin obtained by ultrasound-assisted extraction and hydrodistillation. *Journal of Medicinal Plants Research*, 5(13), 2839–2847. <http://www.academicjournals.org/JMPR>
- Davis, W. W., & Stout, T. R. (1971). Disc Plate Method of Microbiological Antibiotic Assay. *Applied Microbiology*, 22(4), 659–665.
- De Caro, C. A., Toledo, M., & Claudia, H. (2017). *UV/VIS Spectrophotometry-Fundamentals and Applications* (C. A. De Caro, Ed.). Mettler Toledo. <https://www.researchgate.net/publication/321017142>
- Dorman, H. J. D., & Deans, S. G. (2000). Antimicrobial agents from plants: antibacterial activity of plant volatile oils. *Journal of Applied Microbiology*, 88, 308–316.
- Erasto, P., & Viljoen, A. M. (2008). Limonene-A Review: Biosynthetic, Ecological and Pharmacological Relevance. *Natural Product Communications*, 3(7), 1193–1202.
- Fachriyah, E., Kusriani, D., Haryanto, I. B., Wulandari, S. M. B., Lestari, W. I., & Sumariyah, S. (2020). Phytochemical Test, Determination of Total Phenol, Total Flavonoids and Antioxidant Activity of Ethanol Extract of Moringa Leaves (*Moringa oleifera* Lam). *Jurnal Kimia Sains dan Aplikasi*, 23(8), 290–294.
- Fachriyah, E., Wibawa, P. J., & Awaliyah, A. (2020). Antibacterial activity of basil oil (*Ocimum basilicum* L) and basil oil nanoemulsion. *Journal of Physics: Conference Series*, 1524(1).
- Feninlambir, M. L., Rawar, E. A., & Yuhara, N. A. (2023). Aktivitas Antioksidan dan Kadar Total Fenolik Dalam Minyak Atsiri Biji Pala. *Jurnal Penelitian Farmasi Indonesia*, 12(2), 111–116.
- Fitra Suloi, A., Nur, A., & Suloi, F. (2021). Bioaktivitas Pala (*Myristica fragrans* Houtt) : Ulasan Ilmiah. *Jurnal Teknologi Pengolahan Pertanian*, 3(1), 11–18. www.google.com
- Foster, T. J. (2004). The *Staphylococcus aureus* “superbug.” *Journal of Clinical Investigation*, 114(12), 1714–1725.
- Guntama, D., Juan Firmansyah, R., & Amanda Syfa Pujiutami, T. (2021). Analisis Sifat dan Efektivitas Anti-Mikroba Minyak Atsiri Biji Pala (*Myristica fragrans*) untuk Pemurnian Kualitas Udara pada Ruang ISO Class 8. *Jurnal Migasian*, 5(1), 2580–2588.
- Guntur, A., Selena, M., Bella, A., Leonarda, G., Leda, A., Setyaningsih, D., Dika, F., & Riswanto, O. (2021). Kemangi (*Ocimum basilicum* L.): Kandungan Kimia, Teknik Ekstraksi, dan Uji Aktivitas Antibakteri. *Journal of Food and Pharmaceutical Sciences*, 2021(3), 513–528. www.journal.ugm.ac.id/v3/JFPA
- Hamad, A., Dianata, W. A., & Hartanti, D. (2022). Aktivitas Antibakteri Kombinasi Minyak Atsiri Cengkeh (*Syzygium aromaticum*) dan Kitosan pada Pengawetan Daging Ayam. *Sainteks*, 19(2), 211.
- Hasyim Ibroham, M., Jamilatun, S., & Dyah Kumalasari, I. (2022). A Review: *Potensi Tumbuhan-Tumbuhan di Indonesia sebagai Antioksidan Alami*. <http://jurnal.umj.ac.id/index.php/semnaslit>

- Hyldgaard, M., Mygind, T., & Meyer, R. L. (2012). Essential oils in food preservation: Mode of action, synergies, and interactions with food matrix components. *Frontiers in Microbiology*, 3(1), 1–24.
- Ilić, Z. S., Milenković, L., Šunić, L., Tmušić, N., Mastilović, J., Kevrešan, Ž., Stanojević, L., Danilović, B., & Stanojević, J. (2021). Efficiency of basil essential oil antimicrobial agents under different shading treatments and harvest times. *Agronomy*, 11(8), 2–12.
- ISO. (1998). *Oil of basil, methyl chavicol type (Ocimum basilicum L.)*. <https://standards.iteh.ai/catalog/standards/sist/bc0c2002-f1a8-4c0a-b889->
- Jawetz, E., Melnick, J. L., & Adelberg, E. A. (2001). *Mikrobiologi Kedokteran* (R. N. Elferia, Ed.; 23 ed.). Penerbit Buku Kedokteran.
- Juliarti, A., Wijayanto, N., & Mansur, I. (2020). Analisis Rendemen Minyak Serehwangi (*Cymbopogon nardus L.*) yang Ditanam dengan Pola Agroforestri dan Monokultur pada Lahan Revegetasi Pasca Tambang Batubara Citronella (*Cymbopogon nardus L.*) Oil Yield Analysis Planted with Agroforestry and Monoculture Patterns on Post-Coal Mining Revegetation Land. *Jurnal Sylva Lestari ISSN*, 8(2), 181–188.
- Kalemba, D., & Kunicka, A. (2003). Antibacterial and Antifungal Properties of Essential Oils. *Current Medicinal Chemistry*, 10, 813–829.
- Kaur, G., & Sharma, S. (2018). Gas Chromatography-A Brief Review. *International Journal of Information and Computing Science*, 5(7). <http://ijics.com/>
- Kedare, S. B., & Singh, R. P. (2011). Genesis and development of DPPH method of antioxidant assay. Dalam *Journal of Food Science and Technology* (Vol. 48, Nomor 4, hlm. 412–422).
- Kesuma Sayuti, I., & Yenrina, R. (2015). *Antioksidan Alami dan Sintetik*. Andalas University Press.
- Khairan, K., Faradilla, M., Ginting, B., Sufriadi, E., Gusti Vonna, A., Akmal, M., Sofyan, H., Diah, M., Muhammad, S., & Khairan Syaifullah Muhammad, K. (2024). Isolation of Nutmeg Essential Oil (*Myristica fragrans houtt*) From Aceh Indonesia and Their Antioxidant and Antibacterial Activities. Dalam *RESEARCH ARTICLE 425 Indonesian J Pharm* (Vol. 35, Nomor 3).
- Krismayadi, Halimatushadyah, E., Apriani, D., & Fitri Cahyani, M. (2024). Standarisasi Mutu Simplisia dan Ekstrak Etanol Daun Kemangi. *Pharmacy Genius*, 3(2), 67–81.
- Legoh, L. W., Runtunuwu, S., & Wanget, S. (2020). Karakterisasi Pala (*Myristica fragrans L.*) di Kabupaten Kepulauan Sangihe berdasarkan Morfologi Buah dan Daun. *Agri Sosio Ekonomi*, 16(2), 279–290.
- Levita, J., Salim, S. A., Saputri, F. A., & Saptarini, N. M. (2020). Review Artikel: Kelebihan dan Keterbatasan Pereaksi Folin-Cicalteu dalam Penentuan Kadar Fenol Total pada Tanaman. *Farmaka*, 18(1), 46–57.
- Liem, M., Monica, E., & Yanuar, M. R. (2025). Formulasi Serum Minyak Atsiri Timi dan Cengkeh serta Uji Aktivitas Antioksidan dengan Metode DPPH. *Farmasains : Jurnal Ilmiah Ilmu Kefarmasian*, 12(1), 22–33.
- Lorigooini, Z., Jamshidi-Kia, F., & Hosseini, Z. (2020). Analysis of aromatic acids (phenolic acids and hydroxycinnamic acids). Dalam S. M. Nabavi, M. Saedi, S. F. Nabavi, & A. T. S. Silva (Ed.), *Recent Advances in Natural Products Analysis* (1st ed., hlm. 199–219). Elsevier.

- Machmudi, M. I. (2020). *Analisis Minyak Atdiri Jinten Hitam (Nigella sativa) Indonesia Dengan Kromatografi Gas-Spektroskopi Massa* [Skripsi]. Institut Teknologi Sepuluh Nopember.
- Maryati. (2023). Isolasi, Karakterisasi, dan Identifikasi Senyawa Kimia dari Minyak Atsiri Biji Pala Papua (*Myristica argentea* Warb). *Gorontalo Agriculture Technology Journal*, 6(2), 65–73.
- Moghaddam, M., & Mehdizadeh, L. (2017). Chemistry of Essential Oils and Factors Influencing Their Constituents. Dalam *Soft Chemistry and Food Fermentation* (hlm. 379–419). Elsevier.
- Morsy, N. F. S. (2017). Chemical Structure, Quality Indices and Bioactivity of Essential Oil Constituents. Dalam *Active Ingredients from Aromatic and Medicinal Plants* (hlm. 176–206). InTech.
- Muhamad Ansory, H., Khania Kusuma Putri, P., Hidayah, A., & Nilawatim Ani. (2018). Analisis Senyawa Minyak Atsiri Biji Pala Secara GC-MS dan Uji Aktivitas Antibakteri Terhadap *Escherichia coli* dan *Staphylococcus aureus*. *Prosiding SNST ke-9 Tahun 2018*, 19–25.
- Mulyati, H. S., Yanti, R., & Supriyadi, S. (2023). Physicochemical Properties and Antioxidant Activity of Essential Oil from Fresh, Wilted, and Dried Leaves of Holy Basil (*Ocimum tenuiflorum* L.) Planted in Yogyakarta. *agriTECH*, 43(3), 218.
- Naeem, A., Abbas, T., Ali, M. T., & Hasnain, A. (2018). Essential Oils: Brief Background and Uses. *Remedy Publications LLC*, 1(1), 1–6.
- Natan, P. D. (2023). Karakterisasi dan Potensi Antioksidan Minyak Atsiri Biji Pala (*Meristica fragrans* Houtt). *Jurnal Multidisiplin Kita*, 1(3), 266–268.
- Nazzaro, F., Fratianni, F., De Martino, L., Coppola, R., & De Feo, V. (2013). Effect of essential oils on pathogenic bacteria. *Pharmaceuticals*, 6(12), 1451–1474.
- Neagu, R., Popovici, V., Ionescu, L. E., Ordeanu, V., Biță, A., Popescu, D. M., Ozon, E. A., & Gîrd, C. E. (2024). Phytochemical Screening and Antibacterial Activity of Commercially Available Essential Oils Combinations with Conventional Antibiotics against Gram-Positive and Gram-Negative Bacteria. *Antibiotics*, 13(6).
- Pandey, A. K., Singh, P., & Tripathi, N. N. (2014). Chemistry and bioactivities of essential oils of some *Ocimum* species: An overview. Dalam *Asian Pacific Journal of Tropical Biomedicine* (Vol. 4, Nomor 9, hlm. 682–694). Asian Pacific Tropical Biomedicine Press.
- Pareta, D. (2022). Identifikasi Senyawa Metabolit Sekunder Minyak Atsiri Biji Pala (*Meristica fragrans* Houtt) menggunakan Metode GC-MS. *Majalah InfoSains*, 2(3), 100–102.
- Pereira, D. M., Valentão, P., Pereira, J. A., & Andrade, P. B. (2009). Phenolics: From chemistry to biology. *Molecules*, 14(6), 2202–2211.
- Permatasari, A., Kusmita, L., & Franyoto, Y. D. (2020). Uji Aktivitas Antibakteri Kombinasi Minyak Atsiri Umbi Bawang Merah (*Allium cepa* L.) dan Daun Kemangi (*Ocimum americanum* L.) terhadap Bakteri *Staphylococcus aureus* ATCC 25923 secara In Vitro. *Media Farmasi Indonesia*, 10(2), 949–959.
- Pratiwi, A., & Salimah, I. (2020). Aktivitas Antioksidan dan Antimikroba Minyak Atsiri Kembang Leson. *Al-Kaunyah: Jurnal Biologi*, 13(2), 139–146.
- Puspita, J. N., Kurniatuhadi, R., & Rahmawati. (2021). The Antibacterial Activity of *Thermoactinomyces* sp. (H24) Extract Against *Escherichia coli* and

- Staphylococcus aureus. *Indonesian Journal of Medical Laboratory Science and Technology*, 3(1), 56–63.
- Putri, M. A. (2020). Perbandingan Aktivitas Antioksidan terhadap Biji Bunga Matahari (*Helianthus Annuus L.*) dengan Tumbuhan Lainnya. *Journal of Research and Education Chemistry*, 2(2), 85–91.
- Qorriaina, R., Hawa, L. C., Yulianingsih, R., Keteknikan, J., Teknologi, P.-F., Brawijaya, P.-U., Veteran, J., & Korespondensi, P. (2015). Aplikasi Pra-Perlakuan Microwave Assisted Extraction (MAE) Pada Ekstrak Daun Kemangi (*Ocimum sanctum*) Menggunakan Rotary Evaporator (Studi Pada Variasi Suhu dan Waktu Ekstraksi). *Jurnal Bioproses Komoditas Tropis*, 3(1), 32–38.
- Ramírez-Alarcón, K., Martorell, M., Gürer, E. S., Laher, I., Lam, H. L., Mohieldin, E. A. M., Muddathir, A. M., Akram, M., Iqbal, M., Shafique, H., Leyva-Gómez, G., Shaheen, S., Kumar, M., Sharifi-Rad, J., Amarowicz, R., & Butnariu, M. (2023). Myristicin: From its biological effects in traditional medicine in plants to preclinical studies and use as ecological remedy in plant protection. *eFood*, 4(3), 1–14.
- Sahu, A., Nayak, G., Bhuyan, S. K., Bhuyan, R., Kar, D., & Kuanar, A. (2024). Antioxidant and antimicrobial activities of *Ocimum basilicum* var. *thyrsoiflora* against some oral microbes. *Multidisciplinary Science Journal*, 6(3), 2–8.
- Sastrohamidjojo, H. (1985). *Kromatografi*. Penerbit Liberty. 36-39.
- Sastrohamidjojo, H. (2014). *Kimia Minyak Atsiri*. Gadjah Mada University Press, 1–26.
- Semeniuc, C. A., Pop, C. R., & Rotar, A. M. (2017). Antibacterial activity and interactions of plant essential oil combinations against Gram-positive and Gram-negative bacteria. *Journal of Food and Drug Analysis*, 25(2), 403–408.
- Shaaban, H. A. E., El-Ghorab, A. H., & Shibamoto, T. (2012). Bioactivity of essential oils and their volatile aroma components: Review. Dalam *Journal of Essential Oil Research* (Vol. 24, Nomor 2, hlm. 203–212).
- Shah, Bhavin., & Mehta, A. A. (2018). In vitro evaluation of antioxidant activity of D-Limonene. *Asian Journal of Pharmacy and Pharmacology*, 4(6), 883–887.
- Shah, R., Ismaili, S. H. Al, Al-Siaby, S. S., Nasiri, A. M. Al, Maskari, T. H. Al, AlSabahi, J., & Al-Ruqaishi, H. (2022). Determination of Chemical Composition of Essential Oils Extracted from Conventional and Organically grown Basil (*Ocimum Basilicum*) from Different Geographical Regions. *Sarhad Journal of Agriculture*, 38(2), 532–539.
- Skoog, D. A., West, D. M., Holler, J. F., & Crouch, S. R. (2013). *Fundamentals of Analytical Chemistry* (S. Kiselica, Ed.; Ninth Edition). Cengage Learning.
- SNI. (2006). *Standar Nasional Indonesia Minyak pala ICS 71.100.60 Badan Standardisasi Nasional*.
- Sparkman, O. D., Penton, Z., & Kitson, F. G. (2011). *Gas Chromatography and Mass Spectrometry : a practical guide* (F. G. Kitson, B. S. Larsen, & C. N. McEwen, Ed.; 2nd ed.). Elsevier.
- Suharti, T. (2017). *Dasar - Dasar Spektrofotometri UV-Vis dan Spektrometri Massa untuk Penentuan Struktur Senyawa Organik* (T. Suharti, Ed.). Anugrah Utama Raharja.

- Timotius, T., Limanan, D., & Ferdinal, F. (2022). Uji Toksisitas, Aktivitas Antioksidan dan Kadar Metabolit Sekunder Daun Kemangi (*Ocimum xaffricanum* lour). *Jurnal Muara Medika dan Psikologi Klinis*, 1(2), 139–146.
- Umarudin, Adnyana, I. G. A., Slamet, N. S., Sembiring, F., Rakanita, Y., Sari, N. K. Y., Sumariangen, A. B., Kurniati, I., Yuliawati, Permatasari, A. A. A. P., Merdekawati, F., & Dermawarn, A. (2023). *Bakteriologi 2* (Umarudin, Ed.). Media Sains Indonesia.
- Wicaksono, A. R. (2016). *Identifikasi Bakteri Escherichia coli dan Shigella sp. Terhadap Jajanan Cilok Pada Lingkungan SD Negeri Di Cirendeu, Pisangan, dan Cempaka Putih* [Skripsi]. UIN Syarif Hidayatullah Jakarta.
- Wogo, H. E., Mere, J. K., & Gauru, I. (2016). Identification Of The Organic Compounds Of Ethyl Acetic Extract Of Citronelal Oil (*Cymbopogon Citratus* (Dc.) Stapf), Purified With Aniline-Intercalated Clay. *Sains dan Terapan Kimia*, 10(2), 54.
- Wulandari, I. (2017). *Uji Aktivitas Antibakteri Kombinasi Minyak Atsiri Daun Kemangi (*Ocimum basilicum* L.) dan Biji Pala (*Myristica fragrans* H.) Terhadap *Staphylococcus aureus* ATCC 25923* [Skripsi]. Universitas Setia Budi .
- Zagoto, M., Cardia, G. F. E., Rocha, E. M. T. da, Mourão, K. S. M., Janeiro, V., Cuman, R. K. N., Pinto, A. A., Contiero, R. L., & Freitas, P. S. L. de. (2021). Biological activities of basil essential oil: a review of the current evidence. *Research, Society and Development*, 10(12), 1–8.