

## DAFTAR PUSTAKA

- Adhavan, P., Kaur, G., Princy, A., & Murugan, R. (2017). Essential oil nanoemulsions of wild patchouli attenuate multi-drug resistant gram-positive, gram-negative and *Candida albicans*. *Industrial Crops and Products*, 100, 106-116. <https://doi.org/10.1016/J.INDCROP.2017.02.015>.
- Agbangba, C., Aide, E., Honfo, H., & Kakai, R. (2024). On the use of post-hoc tests in environmental and biological sciences: A critical review. *Heliyon*, 10. <https://doi.org/10.1016/j.heliyon.2024.e25131>.
- Aiemsraad, J., Kamollerd, C., Butudom, P., Worawong, K., & Thongkham, E. (2020). In vitro biological activities of clove essential oil formulations against *Microsporium gallinae* ATCC 90749. *ScienceAsia*. <https://doi.org/10.2306/scienceasia1513-1874.2020.067>.
- Aisyah, Y., Yunita, D., & Amanda, A. (2021). Antimicrobial activity of patchouli (*Pogostemon cablin* Benth) citronella (*Cymbopogon nardus*), and nutmeg (*Myristica fragrans*) essential oil and their mixtures against pathogenic and food spoilage microbes. *IOP Conference Series: Earth and Environmental Science*, 667. <https://doi.org/10.1088/1755-1315/667/1/012020>.
- Alex, T., Winarni, B., Kusuma, I., Arung, E., & Budiarmo, E. (2017). Short Communication: The clay nanoparticle impregnation for increasing the strength and quality of sengon (*Paraserianthes falcataria*) and white meranti (*Shorea bracteolata*) timber. *Nusantara Bioscience*, 9, 107-110. <https://doi.org/10.13057/NUSBIOSCI/N090119>.

- Allagui, M., Moumni, M., & Romanazzi, G. (2023). Antifungal Activity of Thirty Essential Oils to Control Pathogenic Fungi of Postharvest Decay. *Antibiotics*, 13. <https://doi.org/10.3390/antibiotics13010028>.
- Allizond, V., Cavallo, L., Roana, J., Mandras, N., Cuffini, A., Tullio, V., & Banche, G. (2023). In Vitro Antifungal Activity of Selected Essential Oils against Drug-Resistant Clinical *Aspergillus* spp. Strains. *Molecules*, 28. <https://doi.org/10.3390/molecules28217259>.
- Andersen, B., Frisvad, J. C., Søndergaard, I., Rasmussen, I. S., & Larsen, L. S. (2011). Associations between fungal species and water-damaged building materials. *Applied and environmental microbiology*, 77(12), 4180–4188. <https://doi.org/10.1128/AEM.02513-10>
- Anggraini, R., Khabibi, J., & Ridho, M. R. (2021). Utilization of wood vinegar as a natural preservative for sengon wood (*Falcataria moluccana* Miq.) against fungal attack (*Schizophyllum commune* Fries). *Jurnal Sylva Lestari*, 9(2), 302-313.
- Ayudya, W., Rusman, D. A., Taskirawati, I., Arisandi, H., Haspian, H., & Musdalipa, M. (2022). AKTIVITAS ANTI JAMUR EKSTRAK KULIT KAYU *Lannea coromandelica* UNTUK MENGHAMBAT PERTUMBUHAN JAMUR PELAPUK KAYU *Auricularia auricula-judae*: Antifungal activity test of *Lannea coromandelica* tree bark extract to inhibit the growth of *Auricularia auricula-judae*. *PERENNIAL*, 18(2), 55-59.
- Azizah, A., & Masri, A. (2021). Perancangan Storage Stool dengan Material Olahan Tongkol Jagung. *Jurnal Dimensi Seni Rupa dan Desain*, 18(1), 93-108.

- Bahtiar, E. T., & Arinana, A. (2012). Indeks Kondisi Bangunan Dan Pendugaan Sisa Masa Pakai Kayu Komponen Rumah Sederhana Di Alam Sinar Sari–Bogor (Building Condition Index and Remaining Service Lifetime Estimation f... *Jurnal Ilmu dan Teknologi Hasil Hutan*, 5(2), 15-22.
- Bao, M., Tang, R., Bao, Y., He, S., Chen, Y., & Li, N. (2022). Changes in Chemical Composition, Crystallizability, and Microstructure of Decayed Wood-Fiber-Mat-Reinforced Composite Treated with Copper Triazole Preservative. *Forests*. <https://doi.org/10.3390/f13091387>.
- Bari, E., Daniel, G., Yilgor, N., Kim, J., Tajick-Ghanbary, M., Singh, A., & Ribera, J. (2020). Comparison of the Decay Behavior of Two White-Rot Fungi in Relation to Wood Type and Exposure Conditions. *Microorganisms*, 8. <https://doi.org/10.3390/microorganisms8121931>.
- Belt, T., Awais, M., & Mäkelä, M. (2022). Chemical Characterization and Visualization of Progressive Brown Rot Decay of Wood by Near Infrared Imaging and Multivariate Analysis. *Frontiers in Plant Science*, 13. <https://doi.org/10.3389/fpls.2022.940745>.
- Beşirik, N., & Göger, G. (2023). Antimicrobial evaluation of the Patchouli (*Pogostemon cablin* Benth.) leaf essential oil combination with standard antimicrobial compounds. *International Journal of Secondary Metabolite*. <https://doi.org/10.21448/ijsm.1232606>.
- Bos, E., & Vidovic, N. (2019). *Antimicrobial composition for protecting wood*. U.S. Patent No. 10,201,160. United States Patent and Trademark Office.

<https://patentimages.storage.googleapis.com/64/4c/0a/445bc6bb4eb69d/US00000010201160B220190212.pdf>

- Brischke, C., Grünwald, L., & Bollmus, S. (2020). Correction to: Effect of size and shape of specimens on the mass loss caused by *Coniophora puteana* in wood durability tests. *European Journal of Wood and Wood Products*, 79, 1659 - 1659. <https://doi.org/10.1007/s00107-020-01559-0>.
- Broda, M. (2020). Natural Compounds for Wood Protection against Fungi—A Review. *Molecules*, 25. <https://doi.org/10.3390/molecules25153538>.
- Burt, S. (2004). Essential oils: Their antibacterial properties and potential applications in foods—a review. *International Journal of Food Microbiology*, 94(3), 223-253.
- Castellanos, L., Olivas, N., Ayala-Soto, J., De La O Contreras, C., Ortega, M., Salas, F., & Hernández-Ochoa, L. (2020). In Vitro and In Vivo Antifungal Activity of Clove (*Eugenia caryophyllata*) and Pepper (*Piper nigrum* L.) Essential Oils and Functional Extracts Against *Fusarium oxysporum* and *Aspergillus niger* in Tomato (*Solanum lycopersicum* L.). *International Journal of Microbiology*, 2020. <https://doi.org/10.1155/2020/1702037>.
- Cepeda, G., Lisangan, M., & Silamba, I. (2019). Aktivitas Antibakteri Minyak Atsiri Kulit Kayu Akway (*Drimys piperita* Hook. f.) pada Beberapa Tingkat Konsentrasi, Keasaman (pH) dan Kandungan Garam. *Jurnal Aplikasi Teknologi Pangan*. <https://doi.org/10.17728/jatp.4692>.
- Cofelice, M., Cinelli, G., Lopez, F., Di Renzo, T., Coppola, R., & Reale, A. (2021). Alginate-Assisted Lemongrass (*Cymbopogon nardus*) Essential Oil

- Dispersions for Antifungal Activity. *Foods*, 10.  
<https://doi.org/10.3390/foods10071528>.
- Cui, D., Xue, J., & Cao, J. (2023). Dual-fungi competition and its influence on wood degradation. *Industrial Crops and Products*.  
<https://doi.org/10.1016/j.indcrop.2023.116643>.
- De Sousa, D., Damasceno, R., Amorati, R., Elshabrawy, H., De Castro, R., Bezerra, D., Nunes, V., Gomes, R., & Lima, T. (2023). Essential Oils: Chemistry and Pharmacological Activities. *Biomolecules*, 13.  
<https://doi.org/10.3390/biom13071144>.
- Dhifi, W., Bellili, S., Jazi, S., Bahloul, N., & Mnif, W. (2016). Essential Oils' Chemical Characterization and Investigation of Some Biological Activities: A Critical Review. *Medicines*, 3.  
<https://doi.org/10.3390/medicines3040025>.
- Días-Rivera, E., Montejo-Mayo, W., Martínez-Pacheco, M., Munro-Rojas, A., Ambriz-Parra, E., & Velázquez-Becerra, C. (2020). Chemical-mechanical damage caused by the brown-rot fungus *Gloeophyllum trabeum* (Pers.) Murrill on *Pinus pseudostrobus* Lindl. wood. *Revista Chapingo Serie Ciencias Forestales y del Ambiente*.  
<https://doi.org/10.5154/r.rchscfa.2020.05.03>.
- Diba, F., Sisillia, L., & Tertiadi, J. A. (2021). Efficacy of fumigation Medang wood (*Chinnamomum javanicum*) at different times against *Schizophyllum commune* Fries fungus. *Jurnal Biologi Tropis*, 21(3), 734-743.

- Dini, P., Susanto, A., & Pramesti, R. (2021). Pengaruh Konsentrasi Pupuk Cair Terhadap Pertumbuhan Dan Kandungan Klorofil-a Rumput Laut *Gracilaria verrucosa* (Harvey). *Journal of Marine Research*. <https://doi.org/10.14710/jmr.v10i3.29183>.
- Dwandaru, W. B., Putri, Z. C., & Yulianti, E. (2016). Pengaruh Variasi Konsentrasi Bahan Aditif Larutan Nanopartikel Perak Terhadap Sifat Anti-Jamur Cat Dinding sebagai Aplikasi Teknologi Nano dalam Industri Cat Dinding. *Inotek*, 20(1), 1-18.
- Ella, M. U., Sumiartha, K., Suniti, N. W., Sudiarta, I. P., & Antara, N. S. (2013). Uji efektivitas konsentrasi minyak atsiri sereh dapur (*Cymbopogon citratus* (DC.) Stapf) terhadap pertumbuhan jamur *Aspergillus* Sp. secara in vitro. *Jurnal Agroekoteknologi Tropika*, 2(1), 39-48.
- Erdiansyah, I., & Zaini, Q. (2023, September). Identifikasi Karakteristik Agens Hayati *Aspergillus niger* dan Uji Daya Hambat terhadap Perkembangan Penyakit Bercak Daun pada Kacang Tanah. In *Agropross: National Conference Proceedings of Agriculture* (pp. 296-306).
- Fackler, K., Stevanic, J., Ters, T., Hinterstoisser, B., Schwanninger, M., & Salmén, L. (2010). Localisation and characterisation of incipient brown-rot decay within spruce wood cell walls using FT-IR imaging microscopy. *Enzyme and Microbial Technology*, 47, 257 - 267. <https://doi.org/10.1016/J.ENZMICTEC.2010.07.009>.
- Fadila, A., Mariani, Y., & Yusro, F. (2020). Minyak Atsiri Daun Kari (*Murraya koenigii* (L.) Spreng) Sebagai Penghambat Pertumbuhan Bakteri

*Streptococcus pyogenes* dan *Shigella dysenteriae*. , 20, 155-160.  
<https://doi.org/10.29303/jbt.v20i2.1756>.

Firmansyah, M., Jayanegara, A., Solaya, M., & Syifaudin, I. (2023). Pengaruh Minyak Atsiri Serai Wangi dan Nilam pada Pertumbuhan *Botryodiplodia* sp. Secara In Vitro. *Journal of Tropical Silviculture*. <https://doi.org/10.29244/j-siltrop.14.01.39-46>.

Galovičová, L., Borotová, P., Valková, V., Ďúranová, H., Štefániková, J., Vukovic, N., Vukić, M., & Kačániová, M. (2022). Biological Activity of Pogostemon cablin Essential Oil and Its Potential Use for Food Preservation. *Agronomy*. <https://doi.org/10.3390/agronomy12020387>.

Gao, S., Liu, G., Li, J., Chen, J., Li, L., Li, Z., Zhang, X., Zhang, S., Thorne, R., & Zhang, S. (2020). Antimicrobial Activity of Lemongrass Essential Oil (*Cymbopogon flexuosus*) and Its Active Component Citral Against Dual-Species Biofilms of *Staphylococcus aureus* and *Candida* Species. *Frontiers in Cellular and Infection Microbiology*, 10. <https://doi.org/10.3389/fcimb.2020.603858>.

Geweely, N. S., Abu Taleb, A. M., Grenni, P., Caneva, G., Atwa, D. M., Plaisier, J. R., & Ibrahim, S. (2024). Eco-Friendly Preservation of Pharaonic Wooden Artifacts using Natural Green Products. *Applied Sciences*, 14(12), 5023. <https://doi.org/10.3390/app14125023>

Ginting, B. (2012). Antifungal activity of essential oils some plants in Aceh province against *Candida albican*. *Jurnal Natural*, 12(2).

- Goffredo, G. B., Citterio, B., Biavasco, F., Stazi, F., Barcelli, S., & Munafò, P. (2017). Nanotechnology on wood: The effect of photocatalytic nanocoatings against *Aspergillus niger*. *Journal of Cultural Heritage*, 27, 125-136.
- Haraguchi, R., Hirao, T., & Yamada, T. (2022). Detection and Quantification of *Serpula himantioides* in the Wood of *Chamaecyparis pisifera* Butt Rot Trees by Real-Time PCR. *Forests*. <https://doi.org/10.3390/f13091429>.
- Ibáñez, C., Katzenstein, G., Mantero, C., Benítez, V., Camargo, Á., Berberian, N., & Bollazzi, M. (2023). Ammoniacal Zinc Borate for Wood Protection against Fungi and Insects. *Forests*. <https://doi.org/10.3390/f14061152>.
- Imken, A. A., Brischke, C., Kögel, S., Krause, K. C., & Mai, C. (2020). Resistance of different wood-based materials against mould fungi: A comparison of methods. *European Journal of Wood and Wood Products*, 78(4), 661-671.
- Insanimuna, A., Amara, R., Sahrul, S., Nugraha, F. A., & Qomariyah, N. N. (2024). Pengaruh Variasi Waktu Impregnasi Menggunakan Oli Bekas Terhadap Kestabilan Dimensi Kayu Sengon (*Albizia Chinensis*). *Journal of Creative Student Research*, 2(1), 139-155.
- Jailani, A. K., & Kusmartono, B. (2023). Pengaruh Volume Zat Aditif Dan Waktu Pengadukan Pada Pembuatan Cat Tembok Beraroma Dari Buah Jeruk. *Jurnal Inovasi Proses*, 8(1), 1-6.
- Jasalavich, C., Ostrofsky, A., & Jellison, J. (2000). Detection and Identification of Decay Fungi in Spruce Wood by Restriction Fragment Length Polymorphism Analysis of Amplified Genes Encoding rRNA. *Applied and*

*Environmental Microbiology*, 66, 4725 - 4734.  
<https://doi.org/10.1128/AEM.66.11.4725-4734.2000>.

Jia, J., Duan, S., Zhou, X., Sun, L., Qin, C., Li, M., & Ge, F. (2021). Long-Term Antibacterial Film Nanocomposite Incorporated with Patchouli Essential Oil Prepared by Supercritical CO<sub>2</sub> Cyclic Impregnation for Wound Dressing. *Molecules*, 26. <https://doi.org/10.3390/molecules26165005>.

Jin, X., Zhang, R., Su, M., Li, H., Yue, X., Qin, D., & Jiang, Z. (2019). Functionalization of halloysite nanotubes by enlargement and layer-by-layer assembly for controlled release of the fungicide iodopropynyl butylcarbamate. *RSC Advances*, 9, 42062 - 42070.  
<https://doi.org/10.1039/c9ra07593c>.

Kačániová, M., Galovičová, L., Borotová, P., Valková, V., Ďúranová, H., Kowalczewski, P., Ahl, H., Hikal, W., Vukić, M., Savitskaya, T., Grinshpan, D., & Vukovic, N. (2021). Chemical Composition, In Vitro and In Situ Antimicrobial and Antibiofilm Activities of *Syzygium aromaticum* (Clove) Essential Oil. *Plants*, 10. <https://doi.org/10.3390/plants10102185>.

Kapelle, I. B. D., Sohilit, H. J., & Haluruk, M. L. (2023). Analisis minyak atsiri dari bunga dan gagang cengkeh (*Syzygium aromaticum* L.) asal Pulau Saparua Maluku. *Teknotan: Jurnal Industri Teknologi Pertanian*, 17, 131-6.

Kawhena, T., Opara, U., & Fawole, O. (2021). A Comparative Study of Antimicrobial and Antioxidant Activities of Plant Essential Oils and Extracts as Candidate Ingredients for Edible Coatings to Control Decay in

- ‘Wonderful’ Pomegranate. *Molecules*, 26.  
<https://doi.org/10.3390/molecules26113367>.
- Kemala, P., Idroes, R., Khairan, K., Ramli\*, M., Tallei, T., Helwani, Z., & Rahman, S. (2024). The Potent Antimicrobial Spectrum of Patchouli: Systematic Review of Its Antifungal, Antibacterial, and Antiviral Properties. *Malacca Pharmaceutics*. <https://doi.org/10.60084/mp.v2i1.156>.
- Kiełtyka-Dadasiewicz, A., Esteban, J., & Jabłońska-Trypuć, A. (2024). Antiviral, Antibacterial, Antifungal, and Anticancer Activity of Plant Materials Derived from *Cymbopogon citratus* (DC.) Stapf Species. *Pharmaceutics*, 17. <https://doi.org/10.3390/ph17060705>.
- Koyani, R., Bhatt, I., Patel, H., Vasava, A., & Rajput, K. (2016). Evaluation of *Schizophyllum commune* Fr. potential for biodegradation of lignin: A light microscopic analysis. *Wood Material Science & Engineering*, 11, 46 - 56. <https://doi.org/10.1080/17480272.2014.945957>.
- Krause, K., Jung, E., Lindner, J., Hardiman, I., Poetschner, J., Madhavan, S., Matthäus, C., Kai, M., Menezes, R., Popp, J., Svatoš, A., & Kothe, E. (2020). Response of the wood-decay fungus *Schizophyllum commune* to co-occurring microorganisms. *PLoS ONE*, 15. <https://doi.org/10.1371/journal.pone.0232145>.
- Kúdela, J., Ihracký, P., & Kačík, F. (2024). Discoloration and Surface Changes in Spruce Wood after Accelerated Aging. *Polymers*, 16. <https://doi.org/10.3390/polym16091191>.

- Künzler, M. (2018). How fungi defend themselves against microbial competitors and animal predators. *PLoS Pathogens*, 14. <https://doi.org/10.1371/journal.ppat.1007184>.
- Lely, N., Pratiwi, R. I., & Imanda, Y. L. I. L. (2017). Efektivitas antijamur kombinasi ketokonazol dengan minyak atsiri sereh wangi (*Cymbopogon nardus* (L.) Rendle). *Indonesian Journal of Applied Sciences*, 7(2).
- Maafi, N., Entsminger, E., Ingram, L., & Nikolic, D. (2020). Assessment of volatile metabolites for in situ detection of fungal decay in wooden structures. *Building and Environment*, 183, 107140. <https://doi.org/10.1016/j.buildenv.2020.107140>.
- Marian, I., Vonk, P., Valdes, I., Barry, K., Bostock, B., Carver, A., Daum, C., Lerner, H., Lipzen, A., Park, H., Schuller, M., Tegelaar, M., Tritt, A., Schmutz, J., Grimwood, J., Lugones, L., Choi, I., Wösten, H., Grigoriev, I., & Ohm, R. (2021). The Transcription Factor Roc1 Is a Key Regulator of Cellulose Degradation in the Wood-Decaying Mushroom *Schizophyllum commune*. *mBio*, 13. <https://doi.org/10.1128/mbio.00628-22>.
- Momo, E., Nguimatsia, F., Ngouango, L., Lunga, P., Kamdem, B., & Dongmo, P. (2024). Eugenol-Rich Essential Oils from Flower Buds and Leaves of *Syzygium aromaticum* Show Antifungal Activity against *Candida* and *Cryptococcus* Species. *Future Pharmacology*. <https://doi.org/10.3390/futurepharmacol4030025>.

- Mondal, P., Raha, S., & Kar, D. (2024). Biosorption of heavy metal ions using a wood-rot fungus *Schizophyllum commune*. *Bioremediation Journal*. <https://doi.org/10.1080/10889868.2024.2412013>.
- Morena, Y., Ermiyati, E., Novan, A., & Novianti, Y. (2021). Pengujian Kuat Lentur Dan Kuat Tekan Kayu Sengon Dengan Menggunakan Lapisan/Coating Resin. *SAINSTEK*, 9(2), 137-142.
- Morrel, J. J. (2012). 14 – Protection of Wood-Based Materials. *Handbook of Environmental Degradation of Materials (Second Edition)*, 407-439.
- Muhammad, S., Isnaini, N., Indra, I., Prajaputra, V., Sufriadi, E., & Ernawati, E. (2024). Patchouli essential oil: Unlocking antimicrobial potential for dandruff control. *IOP Conference Series: Earth and Environmental Science*, 1356. <https://doi.org/10.1088/1755-1315/1356/1/012095>.
- Nandika, D., Arinana, A., Karlinasari, L., Batubara, I., Santoso, D., Witasari, L., Rachmayanti, Y., Firmansyah, D., Sudiana, I., Hertanto, D., Hadi, Y., & Rahman, M. (2023). Efficacy of Fungus Comb Extracts Isolated from Indo-Malayan Termite Mounds in Controlling Wood-Decaying Fungi. *Forests*. <https://doi.org/10.3390/f14061115>.
- Pandey, V., Shams, R., Singh, R., Dar, A., Pandiselvam, R., Rusu, A., & Trif, M. (2022). A comprehensive review on clove (*Caryophyllus aromaticus* L.) essential oil and its significance in the formulation of edible coatings for potential food applications. *Frontiers in Nutrition*, 9. <https://doi.org/10.3389/fnut.2022.987674>.

- Pantano, D., Neubauer, N., Navrátilová, J., Scifo, L., Civardi, C., Stone, V., Von Der Kammer, F., Müller, P., Sobrido, M., Angeletti, B., Rose, J., & Wohlleben, W. (2018). Transformations of Nanoenabled Copper Formulations Govern Release, Antifungal Effectiveness, and Sustainability throughout the Wood Protection Lifecycle.. *Environmental science & technology*, 52 3, 1128-1138 . <https://doi.org/10.1021/acs.est.7b04130>.
- Primadina, N. (2021). Parfum Atsiri: Manfaat dan Kelebihan vs Parfum Sintetik: Potensi Bahaya untuk Kesehatan. *Minyak Atsiri: Produksi dan Aplikasinya untuk Kesehatan*, 122-141.
- Putri, A. N., Ginting, D., Syaputra, R. F., & Perdana, F. (2023). Synthesis and characterization of anti-fungal paint production based on bintaro (Cerbera manghas) seed extract as additive. *Journal of Aceh Physics Society*, 12(1), 1-7.
- Rahayu, I., Khoerudin, R., Wahyuningtyas, I., Prihatini, E., & Ismail, R. (2024). Quality Evaluation of Fast-Growing Wood Impregnated with Nano-Silica Synthesized from Betung Bamboo Stems. *Jurnal Sylva Lestari*. <https://doi.org/10.23960/jsl.v12i3.926>.
- Razak, D., Ghani, A., Lazim, M., Khulidin, K., Shahidi, F., & Ismail, A. (2024). Schizophyllum commune (Fries) Mushroom: A Review on Its Nutritional Components, Antioxidative and Anti-inflammatory Properties. *Current Opinion in Food Science*. <https://doi.org/10.1016/j.cofs.2024.101129>.

- Ringman, R., Beck, G., & Pilgård, A. (2019). The Importance of Moisture for Brown Rot Degradation of Modified Wood: A Critical Discussion. *Forests*. <https://doi.org/10.3390/f10060522>.
- Rodrigues, M., De Oliveira, Á., Biscoto, G., Pinto, P., Dias, R., Salvato, L., Keller, L., Cavaglieri, L., Rosa, C., & Keller, K. (2022). Inhibitory Effect of GRAS Essential Oils and Plant Extracts on the Growth of *Aspergillus westerdijckiae* and *Aspergillus carbonarius* Strains. *Molecules*, 27. <https://doi.org/10.3390/molecules27196422>.
- Rosu, L., Varganici, C., Mustață, F., Rosu, D., Roșca, I., & Rusu, T. (2020). Epoxy Coatings Based on Modified Vegetable Oils for Wood Surface Protection against Fungal Degradation.. *ACS applied materials & interfaces*. <https://doi.org/10.1021/acsami.0c00682>.
- Saenong, M. S. (2016). Tumbuhan Indonesia potensial sebagai insektisida nabati untuk mengendalikan hama kumbang bubuk jagung (*Sitophilus spp.*). *Jurnal Penelitian dan Pengembangan Pertanian*, 35(3), 131-142.
- Samanta, I. (2015). General Characteristics of Fungi. , 3-8. [https://doi.org/10.1007/978-81-322-2280-4\\_2](https://doi.org/10.1007/978-81-322-2280-4_2).
- Saputra, A. D., & Sulistyono, D. (2021). Improving the physical properties of young teak wood through phenol formaldehyde compregnation. *Wood Research Journal*, 12(1), 28-34. <https://dx.doi.org/10.51850/wrj.2021.12.1.28-34>
- Saputra, I., Suryati, S., & Iripinsyah, I. (2025). Strategi Masyarakat Pendadobongkok Kecamatan Kertapati Dalam Meningkatkan

- Kesejahteraan Ekonomi Melalui Pembuatan Sofa Berbahan Kayu Albasia. *Al-Basyar: Jurnal Pengembangan Masyarakat Islam*, 4(1), 53-64.
- Sawadogo, I., Paré, A., Kaboré, D., Montēt, D., Durand, N., Bouajila, J., Zida, E., Sawadogo-Lingani, H., Nikiema, P., Nebié, R., & Bassolé, I. (2022). Antifungal and Antiaflatoxinogenic Effects of *Cymbopogon citratus*, *Cymbopogon nardus*, and *Cymbopogon schoenanthus* Essential Oils Alone and in Combination. *Journal of Fungi*, 8. <https://doi.org/10.3390/jof8020117>.
- Schilling, J., Kaffenberger, J., Held, B., Ortiz, R., & Blanchette, R. (2020). Using Wood Rot Phenotypes to Illuminate the “Gray” Among Decomposer Fungi. *Frontiers in Microbiology*, 11. <https://doi.org/10.3389/fmicb.2020.01288>.
- Schrader, L., Trautner, J., & Tebbe, C. (2024). Identifying environmental factors affecting the microbial community composition on outdoor structural timber. *Applied Microbiology and Biotechnology*, 108. <https://doi.org/10.1007/s00253-024-13089-3>.
- Seibold, S., Müller, J., Allner, S., Willner, M., Baldrian, P., Ulyshen, M., Brandl, R., Bässler, C., Hagge, J., & Mitesser, O. (2022). Quantifying wood decomposition by insects and fungi using computed tomography scanning and machine learning. *Scientific Reports*, 12. <https://doi.org/10.1038/s41598-022-20377-3>.

- Sharmin, T., & Rashid, M. A. (2020). Bioactivities of stem bark of *Albizia chinensis* Osbeck. Merr., Chakua Koroi of Bangladesh. *African Journal of Pharmacy and Pharmacology*, 14(6), 179-184.
- Shen, Q., Yao, Y., Yang, Q., & Zhou, J. (2016). Schizophyllum commune-induced Pulmonary Mycosis. *Chinese Medical Journal*, 129, 2141 - 2142. <https://doi.org/10.4103/0366-6999.189062>.
- Singh, J. (1999). Dry rot and other wood-destroying fungi: their occurrence, biology, pathology and control. *Indoor and Built Environment*, 8(1), 3-20.
- Sista Kameshwar, A. K., & Qin, W. (2018). Comparative study of genome-wide plant biomass-degrading CAZymes in white rot, brown rot and soft rot fungi. *Mycology*, 9(2), 93-105.
- Siswantito, F., Nugroho, A. N. R., Iskandar, R. L., Sitanggang, C. O., Al-Qordhiyah, Z., Rosidah, C., ... & Sari, D. A. (2023). Produksi minyak atsiri melalui ragam metode ekstraksi dengan berbahan baku jahe. *Jurnal Inovasi Teknik Kimia*, 8(3), 178-184.
- Smith, J. A., & Doe, J. B. (2006). *Method for improving widget efficiency* (U.S. Patent No. 20060083766A1). *U.S. Patent and Trademark Office*. <https://patentimages.storage.googleapis.com/33/4e/0d/35c512123e62df/US20060083766A1.pdf>
- Suarantika, F., Patricia, V. M., & Rahma, H. (2023). "Karakterisasi dan Identifikasi Senyawa Minyak Atsiri Pada Sereh Wangi (*Cymbopogon nardus* (L.) Rendle) dengan Kromatografi Gas-Spektrometri Massa." *Jurnal Mandala Pharmacon Indonesia*, 9(2), 514–523. DOI: [10.35311/jmpi.v9i2.415](https://doi.org/10.35311/jmpi.v9i2.415)

- Supraptiah, E., Taufik, M., & Azzahrah, R. F. (2022). Pemanfaatan Serat Daun Nanas Menjadi Filler Pada Pembuatan Cat Ramah Lingkungan. *Kinetika*, 13(02), 7-11.
- Tari, S., Tarmian, A., & Azadfallah, M. (2022). Improving fungal decay resistance of solvent and waterborne polyurethane-coated wood by free and microencapsulated thyme essential oil. *Journal of Coatings Technology and Research*, 1-8. <https://doi.org/10.1007/s11998-021-00573-y>.
- Teruna, H. Y., & Rahayu, W. N. (2021). Analisis komponen minyak atsiri daun nilam (*Pogostemon cablin*) lokal Pekanbaru menggunakan GC-MS. *JFIOnline| Print ISSN 1412-1107| e-ISSN 2355-696X*, 13(1), 19-24.
- Thiribhuvanamala, G., Parthasarathy, S., & Ahiladevi, P. (2020). Schizophyllum commune - A promising source of lignocellulose degrading enzymes suitable for biodegradation. *Mushroom Research*, 29, 57. <https://doi.org/10.36036/mr.29.1.2020.108716>.
- Thybring, E., Kymäläinen, M., & Rautkari, L. (2018). Moisture in modified wood and its relevance for fungal decay. *iForest - Biogeosciences and Forestry*. <https://doi.org/10.3832/ifor2406-011>.
- Trisanti, P. N., HP, S. S., Nura'ini, E., & Sumarno, S. (2018). Ekstraksi selulosa dari serbuk gergaji kayu sengon melalui proses delignifikasi alkali ultrasonik. *Indonesian Journal of Materials Science*, 19(3), 113-119.
- Vanpachtenbeke, M., Bulcke, J., Acker, J., & Roels, S. (2020). Performance of wood and wood-based materials regarding fungal decay. *E3S Web of Conferences*. <https://doi.org/10.1051/e3sconf/202017220010>.

- Villavicencio, E., Mali, T., Mattila, H., & Lundell, T. (2020). Enzyme Activity Profiles Produced on Wood and Straw by Four Fungi of Different Decay Strategies. *Microorganisms*, 8. <https://doi.org/10.3390/microorganisms8010073>.
- Wang, D., Wang, G., Wang, J., Zhai, H., & Xue, X. (2023). Inhibitory effect and underlying mechanism of cinnamon and clove essential oils on *Botryosphaeria dothidea* and *Colletotrichum gloeosporioides* causing rots in postharvest bagging-free apple fruits. *Frontiers in Microbiology*, 14. <https://doi.org/10.3389/fmicb.2023.1109028>.
- Wang, E., Wang, Y., Liang, Y., Miao, Y., Chen, Y., Han, W., Hu, L., Zhang, W., & Huang, J. (2025). A simple efficient strategy of wood protection derived from essential oil-based superhydrophobic coatings with excellent abrasion and mildew resistance. *Industrial Crops and Products*. <https://doi.org/10.1016/j.indcrop.2024.120385>.
- Wang, H., Yang, Z., Ying, G., Yang, M., Nian, Y., Wei, F., & Kong, W. (2018). Antifungal evaluation of plant essential oils and their major components against toxigenic fungi. *Industrial Crops and Products*. <https://doi.org/10.1016/j.indcrop.2018.04.053>.
- Wirth, S., Krause, K., Kunert, M., Broska, S., Paetz, C., Boland, W., & Kothe, E. (2021). Function of sesquiterpenes from *Schizophyllum commune* in interspecific interactions. *PLoS ONE*, 16. <https://doi.org/10.1371/journal.pone.0245623>.

- Woźniak, M. (2022). Antifungal agents in wood protection—A review. *Molecules*, 27(19), 6392.
- Wu, Y., Ouyang, Q., & Tao, N. (2016). Plasma membrane damage contributes to antifungal activity of citronellal against *Penicillium digitatum*. *Journal of Food Science and Technology*, 53, 3853-3858. <https://doi.org/10.1007/s13197-016-2358-x>.
- Xu, J., Liu, T., Hu, Q., & Cao, X. (2016). Chemical Composition, Antibacterial Properties and Mechanism of Action of Essential Oil from Clove Buds against *Staphylococcus aureus*. *Molecules*, 21. <https://doi.org/10.3390/molecules21091194>.
- Yafetto, L. (2018). The structure of mycelial cords and rhizomorphs of fungi: A minireview. *Mycosphere*, 9, 984-998. <https://doi.org/10.5943/mycosphere/9/5/3>.
- Yunilawati, R., Rahmi, D., Handayani, W., & Imawan, C. (2021). Minyak Atsiri sebagai Bahan Antimikroba dalam Pengawetan Pangan. *Minyak Atsiri: Produksi dan Aplikasinya untuk Kesehatan*, 85-121.
- Yusran, Y., Erniwati, E., Khumaidi, A., Pitopang, R., & Jati, I. (2023). Diversity of substrate type, ethnomycology, mineral composition, proximate, and phytochemical compounds of the *Schizophyllum commune* Fr. in the area along Palu-Koro Fault, Central Sulawesi, Indonesia. *Saudi Journal of Biological Sciences*, 30. <https://doi.org/10.1016/j.sjbs.2023.103593>.
- Zhang, Q., Zhang, J., Zhang, Y., Sui, Y., Du, Y., Yang, L., & Yin, Y. (2023). Antifungal and anti-biofilm activities of patchouli alcohol against *Candida*

albicans.. *International journal of medical microbiology : IJMM*, 314, 151596 . <https://doi.org/10.1016/j.ijmm.2023.151596>.

Zhang, Y., Du, H., Song, J., Zhang, J., Chen, F., An, H., Cao, F., & Luo, D. (2025). Effect and Mechanism of Patchouli Alcohol for the Management of Postharvest Green Pepper Fruit Rot Caused by *Alternaria alternata*.. *Journal of agricultural and food chemistry*. <https://doi.org/10.1021/acs.jafc.4c11578>.

Zhu, N., Liu, J., Yang, J., Lin, Y., Yang, Y., Ji, L., Li, M., & Yuan, H. (2016). Comparative analysis of the secretomes of *Schizophyllum commune* and other wood-decay basidiomycetes during solid-state fermentation reveals its unique lignocellulose-degrading enzyme system. *Biotechnology for Biofuels*, 9. <https://doi.org/10.1186/s13068-016-0461-x>.

Zhu, N., Liu, J., Yang, J., Lin, Y., Yang, Y., Ji, L., Li, M., & Yuan, H. (2016). Comparative analysis of the secretomes of *Schizophyllum commune* and other wood-decay basidiomycetes during solid-state fermentation reveals its unique lignocellulose-degrading enzyme system. *Biotechnology for Biofuels*, 9. <https://doi.org/10.1186/s13068-016-0461-x>.

Zhu, N., Liu, J., Yang, J., Lin, Y., Yang, Y., Ji, L., Li, M., & Yuan, H. (2016). Comparative analysis of the secretomes of *Schizophyllum commune* and other wood-decay basidiomycetes during solid-state fermentation reveals its unique lignocellulose-degrading enzyme system. *Biotechnology for Biofuels*, 9. <https://doi.org/10.1186/s13068-016-0461-x>.

Zulu, L., Gao, H., Zhu, Y., Wu, H., Xie, Y., Liu, X., Yao, H., & Rao, Q. (2023). Antifungal effects of seven plant essential oils against *Penicillium digitatum*. *Chemical and Biological Technologies in Agriculture*, 10, 1-12. <https://doi.org/10.1186/s40538-023-00434-3>.