

DAFTAR KEPUSTAKAAN

- Abdi, H., & Williams, L. J. *Encyclopedia of Research Design*.
- Abdulrahman, M. D. (2022). Review of Ethnopharmacology, Morpho-Anatomy, Biological Evaluation and Chemical Composition of *Syzygium polyanthum* (Wight) Walp. In *Plant Science Today* (Vol. 9, Issue 1, pp. 167–177). Horizon e-Publishing Group. <https://doi.org/10.14719/pst.1386>
- Abral, H., Ariksha, J., Mahardika, M., Handayani, D., Aminah, I., Sandrawati, N., Pratama, A. B., Fajri, N., Sapuan, S. M., & Ilyas, R. A. (2020). Transparent and antimicrobial cellulose film from ginger nanofiber. *Food Hydrocolloids*, 98. <https://doi.org/10.1016/j.foodhyd.2019.105266>
- Abral, H., Ariksha, J., Mahardika, M., Handayani, D., Aminah, I., Sandrawati, N., Sapuan, S. M., & Ilyas, R. A. (2020). Highly transparent and antimicrobial PVA based bionanocomposites reinforced by ginger nanofiber. *Polymer Testing*, 81. <https://doi.org/10.1016/j.polymertesting.2019.106186>
- Abral, H., Fajrul, R., Mahardika, M., Handayani, D., Sugiarti, E., Muslimin, A. N., & Rosanti, S. D. (2020). Improving impact, tensile and thermal properties of thermoset unsaturated polyester via mixing with thermoset vinyl ester and methyl methacrylate. *Polymer Testing*, 81. <https://doi.org/10.1016/j.polymertesting.2019.106193>
- Abral, H., Hartono, A., Hafizulhaq, F., Handayani, D., Sugiarti, E., & Pradipta, O. (2019). Characterization of PVA/cassava starch biocomposites fabricated with and without sonication using bacterial cellulose fiber loadings. *Carbohydrate Polymers*, 206, 593–601. <https://doi.org/10.1016/j.carbpol.2018.11.054>
- Abral, H., Ikhsan, M., Rahmadiawan, D., Handayani, D., Sandrawati, N., Sugiarti, E., & Muslimin, A. N. (2022). Anti-UV, antibacterial, strong, and high thermal resistant polyvinyl alcohol/Uncaria gambir extract biocomposite film. *Journal of Materials Research and Technology*, 17, 2193–2202. <https://doi.org/10.1016/j.jmrt.2022.01.120>
- Abral, H., Kadriadi, Mahardika, M., Handayani, D., Sugiarti, E., & Muslimin, A. N. (2019). Characterization of disintegrated bacterial cellulose nanofibers/PVA bionanocomposites prepared via ultrasonication. *International Journal of Biological Macromolecules*, 135, 591–599. <https://doi.org/10.1016/j.ijbiomac.2019.05.178>
- Agarwal, S. (2020). Biodegradable Polymers: Present Opportunities and Challenges in Providing a Microplastic-Free Environment. *Macromolecular Chemistry and Physics*, 221(6). <https://doi.org/10.1002/macp.202000017>
- Alhasny, L., & Supriadi, S. (2021). Ekstraksi Minyak Atsiri Daun Salam (*Syzygium polyanthum*) menggunakan Metode Enfleurasi. *Journal of Experimental and Clinical Pharmacy (JECp)*, 1(2). <https://doi.org/10.52365/jecp.v1i2.238>
- Amalina, N. A., & Ashikin, N. A. (2013). *Chemical Composition, Antioxidant and Antibacterial Activities of Syzygium polyanthum (Wight) Walp. Essential Oils*.

- Annisa, M., Harsini, & Murti, Y. B. (2022). Potential Effect of Bay Leaf (*Syzygium polyanthum* [Wight] Walp.) Essential Oil for Herbal Toothpaste Active Agent. *Majalah Obat Tradisional*, 27(2), 126–133. <https://doi.org/10.22146/mot.73869>
- Ansori Mattjik, A., & Made Sumertajaya. *Sidik Peubah Ganda Dengan menggunakan SAS*.
- Azeredo, H. M. C. de. (2009). Nanocomposites for food packaging applications. In *Food Research International* (Vol. 42, Issue 9, pp. 1240–1253). <https://doi.org/10.1016/j.foodres.2009.03.019>
- BPOM Republik Indonesia, Peraturan Badan Pengawas Obat Dan Makanan, Nomor 20 tahun 2019 tentang Kemasan Pangan, 2019.
- Baranwal, J., Barse, B., Fais, A., Delogu, G. L., & Kumar, A. (2022). Biopolymer: A Sustainable Material for Food and Medical Applications. In *Polymers* (Vol. 14, Issue 5). MDPI. <https://doi.org/10.3390/polym14050983>
- Broman, K. W. *Experimental design, basic statistics, and sample size determination Experimental design*.
- Bruckner, R., Harmata, M., & Wender, P. A. (2010). Organic mechanisms: Reactions, stereochemistry and synthesis. In *Organic Mechanisms: Reactions, Stereochemistry and Synthesis*. Springer Berlin Heidelberg. <https://doi.org/10.1007/978-3-642-03651-4>
- Buckle, J. (2015). Basic Plant Taxonomy, Basic Essential Oil Chemistry, Extraction, Biosynthesis, and Analysis. In *Clinical Aromatherapy* (pp. 37–72). Elsevier. <https://doi.org/10.1016/b978-0-7020-5440-2.00003-6>
- Chaudhary, B. U., Lingayat, S., Banarjee, A. N., & Kale, R. D. (2022a). Preparation and Characterization of Antioxidant, Antimicrobial, and UV-Light Protection Film Based on Poly(vinyl alcohol) and Garlic Peel Extract. *Waste and Biomass Valorization*, 13(12), 4717–4734. <https://doi.org/10.1007/s12649-022-01804-y>
- Chaudhary, B. U., Lingayat, S., Banarjee, A. N., & Kale, R. D. (2022b). Preparation and Characterization of Antioxidant, Antimicrobial, and UV-Light Protection Film Based on Poly(vinyl alcohol) and Garlic Peel Extract. *Waste and Biomass Valorization*, 13(12), 4717–4734. <https://doi.org/10.1007/s12649-022-01804-y>
- Chen, H., Chen, F., Chen, H., Liu, H., Chen, L., & Yu, L. (2023). Thermal degradation and combustion properties of most popular synthetic biodegradable polymers. *Waste Management and Research*, 41(2), 431–441. <https://doi.org/10.1177/0734242X221129054>
- Chen, S., Liu, D., Qian, M., Xu, L., Li, Y., Sun, H., Wang, X., Zhou, H., Bao, J., & Xu, C. (2020). Preparation of cyanobacteria-enhanced poly (vinyl)alcohol-based films with resistance to blue-violet light / red light and water. *PLoS ONE*, 15(2). <https://doi.org/10.1371/journal.pone.0228814>
- Chen, Y. N., Jiao, C., Zhao, Y., Zhang, J., & Wang, H. (2018). Self-Assembled Polyvinyl Alcohol-Tannic Acid Hydrogels with Diverse Microstructures and Good Mechanical Properties. *ACS Omega*, 3(9), 11788–11795. <https://doi.org/10.1021/acsomega.8b02041>
- Chibowski, E., Espinosa-Jiménez, M., Ontiveros-Ortega, A., & Giménez-Martin, E. (1998). *Surface Free Energy, Adsorption and Zeta Potential in Leacril/Tannic Acid System*.

- Damayanti, A. N., Riyadi, P. H., & Dewi, E. N. (2021). Characteristic and boactive potential of brewed Sargassum sp. With the additional bay leaf (*Syzygium polyanthum*). *IOP Conference Series: Earth and Environmental Science*, 890(1). <https://doi.org/10.1088/1755-1315/890/1/012044>
- Dewijanti, I. D., Mangunwardoyo, W., Artanti, N., & Hanafi, M. (2019). Bioactivities of Salam leaf (*Syzygium polyanthum* (Wight) Walp). *AIP Conference Proceedings*, 2168. <https://doi.org/10.1063/1.5132499>
- Dewijanti, I., Mangunwardoyo, W., Astari Dwiranti, Muhammad Hanafi, & Nina Artanti. (2020). Short communication: Effects of the various source areas of Indonesian bay leaves (*Syzygium polyanthum*) on chemical content and antidiabetic activity. *Biodiversitas Journal of Biological Diversity*, 21(3). <https://doi.org/10.13057/biodiv/d210345>
- Dhali, K., Ghasemlou, M., Daver, F., Cass, P., & Adhikari, B. (2021). A review of nanocellulose as a new material towards environmental sustainability. In *Science of the Total Environment* (Vol. 775). Elsevier B.V. <https://doi.org/10.1016/j.scitotenv.2021.145871>
- RSNI, Dokumen Kriteria Ecolabel, 2025.
- Dong, J., Ma, X., Wei, Q., Peng, S., & Zhang, S. (2011). Effects of growing location on the contents of secondary metabolites in the leaves of four selected superior clones of *Eucommia ulmoides*. *Industrial Crops and Products*, 34(3), 1607–1614. <https://doi.org/10.1016/j.indcrop.2011.06.007>
- Ebrahimi, P., Shokramraji, Z., Tavakkoli, S., Mihaylova, D., & Lante, A. (2023). Chlorophylls as Natural Bioactive Compounds Existing in Food By-Products: A Critical Review. In *Plants* (Vol. 12, Issue 7). MDPI. <https://doi.org/10.3390/plants12071533>
- Eghbali Babadi, F., Boonnoun, P., Nootong, K., Powtongsook, S., Goto, M., & Shotipruk, A. (2020). Identification of carotenoids and chlorophylls from green algae *Chlorococcum humicola* and extraction by liquefied dimethyl ether. *Food and Bioproducts Processing*, 123, 296–303. <https://doi.org/10.1016/j.fbp.2020.07.008>
- Elgharbawy, A. S., El Demerdash, A. G. M., Sadik, W. A., Kasaby, M. A., Lotfy, A. H., & Osman, A. I. (2024). Enhancing the Biodegradability, Water Solubility, and Thermal Properties of Polyvinyl Alcohol through Natural Polymer Blending: An Approach toward Sustainable Polymer Applications. *Polymers*, 16(15). <https://doi.org/10.3390/polym16152141>
- 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. In *Molecules* (Vol. 25, Issue 3). MDPI AG. <https://doi.org/10.3390/molecules25030614>
- George, J., & Siddaramaiah. (2012). High performance edible nanocomposite films containing bacterial cellulose nanocrystals. *Carbohydrate Polymers*, 87(3), 2031–2037. <https://doi.org/10.1016/j.carbpol.2011.10.019>

- Ghazi, S. (2022). Do the polyphenolic compounds from natural products can protect the skin from ultraviolet rays? *Results in Chemistry*, 4. <https://doi.org/10.1016/j.rechem.2022.100428>
- Gupta, V. K., & Parsad, R. *Fundamentals Of Design Of Experiments*.
- Guzman-Puyol, S., Benítez, J. J., & Heredia-Guerrero, J. A. (2022). Transparency of polymeric food packaging materials. In *Food Research International* (Vol. 161). Elsevier Ltd. <https://doi.org/10.1016/j.foodres.2022.111792>
- Haghighi, H., Gullo, M., La China, S., Pfeifer, F., Siesler, H. W., Licciardello, F., & Pulvirenti, A. (2021). Characterization of bio-nanocomposite films based on gelatin/polyvinyl alcohol blend reinforced with bacterial cellulose nanowhiskers for food packaging applications. *Food Hydrocolloids*, 113. <https://doi.org/10.1016/j.foodhyd.2020.106454>
- Haghighi, H., Licciardello, F., Fava, P., Siesler, H. W., & Pulvirenti, A. (2020). Recent advances on chitosan-based films for sustainable food packaging applications. In *Food Packaging and Shelf Life* (Vol. 26). Elsevier Ltd. <https://doi.org/10.1016/j.fpsl.2020.100551>
- Ilyas, R. A., Aisyah, H. A., Nordin, A. H., Ngadi, N., Zuhri, M. Y. M., Asyraf, M. R. M., Sapuan, S. M., Zainudin, E. S., Sharma, S., Abral, H., Asrofi, M., Syafri, E., Sari, N. H., Rafidah, M., Zakaria, S. Z. S., Razman, M. R., Majid, N. A., Ramli, Z., Azmi, A., ... Ibrahim, R. (2022). Natural-Fiber-Reinforced Chitosan, Chitosan Blends and Their Nanocomposites for Various Advanced Applications. In *Polymers* (Vol. 14, Issue 5). MDPI. <https://doi.org/10.3390/polym14050874>
- Iskandi, S., Fauziah, F., & Oktavia, S. (2021). Review: Antibacterial Activity of Syzygium polyanthum. *International Journal of Pharmaceutical Sciences and Medicine*, 6(8), 182–186. <https://doi.org/10.47760/ijpsm.2021.v06i08.014>
- Ismail, A., & Wan Ahmad, W. A. N. (2019). Syzygium polyanthum (Wight) Walp: A potential phytomedicine. *Pharmacognosy Journal*, 11(2), 429–438. <https://doi.org/10.5530/pj.2019.11.67>
- Ismayati, M., Fatah, N. A. N., Ernawati, E. E., Juliandri, Kusumaningrum, W. B., Lubis, M. A. R., Fatriasari, W., Solihat, N. N., Sari, F. P., Halim, A., Cholilie, I. A., & Tobimatsu, Y. (2024). Antioxidant and UV-blocking activity of PVA/tannin-based bioplastics in food packaging application. *International Journal of Biological Macromolecules*, 257. <https://doi.org/10.1016/j.ijbiomac.2023.128332>
- Koopmann, A. K., Schuster, C., Torres-Rodríguez, J., Kain, S., Pertl-Obermeyer, H., Petutschnigg, A., & Hüsing, N. (2020). Tannin-Based Hybrid Materials and Their Applications: A Review. In *Molecules (Basel, Switzerland)* (Vol. 25, Issue 21). NLM (Medline). <https://doi.org/10.3390/molecules25214910>
- Kopka, B., Kost, B., Wrześniewska, J., Rajkowska, K., Kadłubowski, S., Kunicka-Styczyńska, A., Baryga, A., Gonciarz, W., Basko, M., & Brzeziński, M. (2023). Supramolecular poly(vinyl alcohol)-based hydrogels containing quercetin for bacterial and fungal elimination. *European Polymer Journal*, 187, 111881. <https://doi.org/10.1016/J.Eurpolymj.2023.111881>

- Kwartiningsih, E., Ramadhani, A. N., Putri, N. G. A., & Damara, V. C. J. (2021). Chlorophyll Extraction Methods Review and Chlorophyll Stability of Katuk Leaves (*Sauropus androgynous*). *Journal of Physics: Conference Series*, 1858(1). <https://doi.org/10.1088/1742-6596/1858/1/012015>
- Lei, Y., Mao, L., Yao, J., & Zhu, H. (2021). Improved mechanical, antibacterial and UV barrier properties of catechol-functionalized chitosan/polyvinyl alcohol biodegradable composites for active food packaging. *Carbohydrate Polymers*, 264. <https://doi.org/10.1016/j.carbpol.2021.117997>
- Liao, J., Brosse, N., Pizzi, A., & Hoppe, S. (2019). Dynamically cross-linked tannin as a reinforcement of polypropylene and UV protection properties. *Polymers*, 11(1). <https://doi.org/10.3390/polym11010102>
- Li, P., Sirviö, J. A., Haapala, A., Khakalo, A., & Liimatainen, H. (2019). Anti-oxidative and UV-absorbing biohybrid film of cellulose nanofibrils and tannin extract. *Food Hydrocolloids*, 92, 208–217. <https://doi.org/10.1016/j.foodhyd.2019.02.002>
- Liu, B., Zhang, J., & Guo, H. (2022). Research Progress of Polyvinyl Alcohol Water-Resistant Film Materials. In *Membranes* (Vol. 12, Issue 3). MDPI. <https://doi.org/10.3390/membranes12030347>
- Liu, C., Du, H., Dong, L., Wang, X., Zhang, Y., Yu, G., Li, B., Mu, X., Peng, H., & Liu, H. (2017). Properties of Nanocelluloses and Their Application as Rheology Modifier in Paper Coating. *Industrial and Engineering Chemistry Research*, 56(29), 8264–8273. <https://doi.org/10.1021/acs.iecr.7b01804>
- Loum, J., Byamukama, R., & Wanyama, P. A. G. (2021). Efficient Extraction of Natural Dyes from Selected Plant Species. *Chemistry Africa*, 4(3), 677–689. <https://doi.org/10.1007/s42250-021-00248-6>
- Lyashenko, V., Sotnik, S., & Ma Babker, A. (2018). Features of Packaging from Polymers in Pharmaceutics. *Saudi Journal of Medical and Pharmaceutical Sciences*. <https://doi.org/10.21276/sjmps.2018.4.2.2>
- Mahardika, M., Abral, H., Kasim, A., Arief, S., Hafizulhaq, F., & Asrofi, M. (2019). Properties of cellulose nanofiber/bengkoang starch bionanocomposites: Effect of fiber loading. *LWT*, 116. <https://doi.org/10.1016/j.lwt.2019.108554>
- Masaki, G., Santoso, F., & Gunawan Puteri. (2022). *Optimization of Aqueous Extraction of Indonesian Bay Leaf (Syzygium polyanthum Wight) as Powder Seasoning*.
- Mendieta-Taboada, O., Sobral, P. J. do A., Carvalho, R. A., & Habitante, A. M. B. Q. (2008). Thermomechanical properties of biodegradable films based on blends of gelatin and poly(vinyl alcohol). *Food Hydrocolloids*, 22(8), 1485–1492. <https://doi.org/10.1016/j.foodhyd.2007.10.001>
- Miguel, M. G. (2010). Antioxidant and anti-inflammatory activities of essential oils: A short review. In *Molecules* (Vol. 15, Issue 12, pp. 9252–9287). <https://doi.org/10.3390/molecules15129252>
- Muppalaneni, srinath. (2013). Polyvinyl Alcohol in Medicine and Pharmacy: A Perspective. *Journal of Developing Drugs*, 02(03). <https://doi.org/10.4172/2329-6631.1000112>

- Nagarkar, R., & Patel, J. (2019). *Acta Scientific Pharmaceutical Sciences (ISSN: 2581-5423) Polyvinyl Alcohol: A Comprehensive Study*.
- Nguyen, H. D., Vu, M. T., & Do, H. D. K. (2023). The complete chloroplast genome of *Syzygium polyanthum* (Wight) Walp. (Myrtales: Myrtaceae). *Journal of Asia-Pacific Biodiversity*, 16(2), 267–271. <https://doi.org/10.1016/j.japb.2023.03.002>
- Nguyen, T. T., Nguyen, T. T. T., Van Tran, T., Van Tan, L., Danh, L. T., & Than, V. T. (2021). Development of antibacterial, antioxidant, and uv-barrier chitosan film incorporated with piper betle linn oil as active biodegradable packaging material. *Coatings*, 11(3). <https://doi.org/10.3390/coatings11030351>
- Nirmal, N., Andrés, A. I., Dubey, N., Julizan, N., Ishmayana, S., Zainuddin, A., Van Hung, P., & Kurnia, D. (2023). *Potential of Syzygium polyanthum as Natural Food Preservative: A Review*. <https://doi.org/10.3390/foods>
- Nyflött, Å., Meriçer, Ç., Minelli, M., Moons, E., Järnström, L., Lestelius, M., & Baschetti, M. G. (2017). The influence of moisture content on the polymer structure of polyvinyl alcohol in dispersion barrier coatings and its effect on the mass transport of oxygen. *Journal of Coatings Technology and Research*, 14(6), 1345–1355. <https://doi.org/10.1007/s11998-017-9937-2>
- Olalla, A. L., Sara, L. I., & Ricardo, B. (2021). Assessment of toxicity and biodegradability of poly(Vinyl alcohol)-based materials in marine water. *Polymers*, 13(21). <https://doi.org/10.3390/polym13213742>
- Olmos, D., & González-benito, J. (2021). Polymeric materials with antibacterial activity: A review. In *Polymers* (Vol. 13, Issue 4, pp. 1–30). MDPI AG. <https://doi.org/10.3390/polym13040613>
- Östbring, K., Sjöholm, I., Rayner, M., & Erlanson-Albertsson, C. (2020). Effects of storage conditions on degradation of chlorophyll and emulsifying capacity of thylakoid powders produced by different drying methods. *Foods*, 9(5). <https://doi.org/10.3390/foods9050669>
- Peña-Ortiz, M., Serrano, L., Romero, A. A., & García, A. (2023). Bay Leaves Extracts as Active Additive for Food Protective Coatings. *Foods*, 12(20). <https://doi.org/10.3390/foods12203741>
- Posoknistakul, P., Tangkrakul, C., Chaosuanphae, P., Deepentharn, S., Techasawong, W., Phonphirunrot, N., Bairak, S., Sakdaronnarong, C., & Laosiripojana, N. (2020). Fabrication and characterization of lignin particles and their ultraviolet protection ability in PVA composite film. *ACS Omega*, 5(33), 20976–20982. <https://doi.org/10.1021/acsomega.0c02443>
- Quideau, S., Deffieux, D., Douat-Casassus, C., & Pouységu, L. (2011). Plant polyphenols: Chemical properties, biological activities, and synthesis. In *Angewandte Chemie - International Edition* (Vol. 50, Issue 3, pp. 586–621). <https://doi.org/10.1002/anie.201000044>
- Rahmadiawan, D., Abral, H., Railis, R. M., Iby, I. C., Mahardika, M., Handayani, D., Natrana, K. D., Juliadmi, D., & Akbar, F. (2022). The Enhanced Moisture Absorption and Tensile Strength of PVA/Uncaria gambir Extract by Boric Acid as a Highly Moisture-Resistant,

Anti-UV, and Strong Film for Food Packaging Applications. *Journal of Composites Science*, 6(11). <https://doi.org/10.3390/jcs6110337>

- Rahmadiawan, D., Abral, H., Shi, S. C., Huang, T. T., Zainul, R., Ambiyar, & Nurdin, H. (2023). Tribological Properties of Polyvinyl Alcohol/Uncaria Gambir Extract Composite as Potential Green Protective Film. *Tribology in Industry*, 45(2), 367–374. <https://doi.org/10.24874/ti.1482.05.23.06>
- Rahmadiawan, D., Ilhamsyah, F., Abral, H., Laghari, I. A., & A, Y. (2022). Effect of sonication to the stability properties of carboxymethyl cellulose/uncaria gambir extract water-based lubricant. *Teknomekanik*, 5(2), 97–102. <https://doi.org/10.24036/teknomekanik.v5i2.16972>
- Rahmadiawan, D., Shi, S.-C., Abral, H., Khalid Ilham, M., Sugiarti, E., Novi Muslimin, A., Ilyas, R., Lapisa, R., & Setiadi Djaya Putra, N. (2024). Comparative Analysis of the Influence of Different Preparation Methods on the Properties of TEMPO-Oxidized Bacterial Cellulose Powder Films. *Journal of Natural Fibers*, 21(1). <https://doi.org/10.1080/15440478.2023.2301386>
- Ranjha, M. M. A. N., Irfan, S., Lorenzo, J. M., Shafique, B., Kanwal, R., Pateiro, M., Arshad, R. N., Wang, L., Nayik, G. A., Roobab, U., & Aadil, R. M. (2021). Sonication, a potential technique for extraction of phytoconstituents: A systematic review. In *Processes* (Vol. 9, Issue 8). MDPI AG. <https://doi.org/10.3390/pr9081406>
- Rech, C. R., Brabes, K. C. S., Silva, B. E. B., Martines, M. A. U., Silveira, T. F. S., Alberton, J., Amadeu, C. A. A., Caon, T., Arruda, E. J., & Martelli, S. M. (2021). Antimicrobial and Physical–Mechanical Properties of Polyhydroxybutyrate Edible Films Containing Essential Oil Mixtures. *Journal of Polymers and the Environment*, 29(4), 1202–1211. <https://doi.org/10.1007/s10924-020-01943-0>
- Rezaee, M., Askari, G., EmamDjomeh, Z., & Salami, M. (2018). Effect of organic additives on physiochemical properties and anti-oxidant release from chitosan-gelatin composite films to fatty food simulant. *International Journal of Biological Macromolecules*, 114, 844–850. <https://doi.org/10.1016/j.ijbiomac.2018.03.122>
- Rinawati, M., Sari, L. A., & Pursetyo, K. T. (2020). Chlorophyll and carotenoids analysis spectrophotometer using method on microalgae. *IOP Conference Series: Earth and Environmental Science*, 441(1). <https://doi.org/10.1088/1755-1315/441/1/012056>
- Rojas-Graü, M. A., Avena-Bustillos, R. J., Olsen, C., Friedman, M., Henika, P. R., Martín-Belloso, O., Pan, Z., & McHugh, T. H. (2007). Effects of plant essential oils and oil compounds on mechanical, barrier and antimicrobial properties of alginate-apple puree edible films. *Journal of Food Engineering*, 81(3), 634–641. <https://doi.org/10.1016/j.jfoodeng.2007.01.007>
- Rusmiyanto, E. P., Kurniatuhadi, R., Hadari Nawawi, J. H., & Barat, K. (2020). *Aktivitas Antifungi Ekstrak Metanol Daun Salam (Syzygium polyanthum [Wight]) Terhadap Pertumbuhan Malassezia Sp. (M1) Secara In Vitro* (Vol. 9, Issue 2).
- Sabandar, C. W., Jalil, J., Ahmat, N., Aladdin, N. A., Zawawi, N. K. N. A., & Sahidin, I. (2022). Anti-Inflammatory and Antioxidant Activity of Syzygium polyanthum (Wight) Walp. *Sains Malaysiana*, 51(5), 1475–1485. <https://doi.org/10.17576/jsm-2022-5105-17>

- Sabee, M. M. S. M., Uyen, N. T. T., Ahmad, N., & Hamid, Z. A. A. (2022). Plastics Packaging for Pharmaceutical Products. In *Encyclopedia of Materials: Plastics and Polymers* (Vols. 1–4, pp. 316–329). Elsevier. <https://doi.org/10.1016/B978-0-12-820352-1.00088-2>
- Saha, T., Hoque, M. E., & Mahbub, T. (2020). Biopolymers for Sustainable Packaging in Food, Cosmetics, and Pharmaceuticals. In *Advanced Processing, Properties, and Applications of Starch and Other Bio-based Polymers* (pp. 197–214). Elsevier. <https://doi.org/10.1016/B978-0-12-819661-8.00013-5>
- Santana de Oliveira, M., & Helena de Aguiar Andrade, E. (Eds.). (2022). *Essential Oils - Advances in Extractions and Biological Applications* (Vol. 32). IntechOpen. <https://doi.org/10.5772/intechopen.98130>
- Savinayah Rahayu, E., Tumbuhan, E., Herriyanto, E., & Prasetyo Utomo, A. Etnobotani Tumbuhan Yang Dijadikan Sebagai Penyedap Rasa Alami, Biologi dan Pembelajaran Biologi
- Seyoum, A., Asres, K., & El-Fiky, F. K. (2006). Structure-radical scavenging activity relationships of flavonoids. *Phytochemistry*, 67(18), 2058–2070. <https://doi.org/10.1016/j.phytochem.2006.07.002>
- Shanbhag, C., Shenoy, R., Shetty, P., Srinivasulu, M., & Nayak, R. (2023). Formulation and characterization of starch-based novel biodegradable edible films for food packaging. *Journal of Food Science and Technology*, 60(11), 2858–2867. <https://doi.org/10.1007/s13197-023-05803-2>
- Sharma, M., Aguado, R., Murtinho, D., Valente, A. J. M., Mendes De Sousa, A. P., & Ferreira, P. J. T. (2020). A review on cationic starch and nanocellulose as paper coating components. In *International Journal of Biological Macromolecules* (Vol. 162, pp. 578–598). Elsevier B.V. <https://doi.org/10.1016/j.ijbiomac.2020.06.131>
- Shirmohammadli, Y., Efhamisizi, D., & Pizzi, A. (2018). Tannins as a sustainable raw material for green chemistry: A review. In *Industrial Crops and Products* (Vol. 126, pp. 316–332). Elsevier B.V. <https://doi.org/10.1016/j.indcrop.2018.10.034>
- Shojaeiarani, J., Bajwa, D., & Holt, G. (2020). Sonication amplitude and processing time influence the cellulose nanocrystals morphology and dispersion. *Nanocomposites*, 6(1), 41–46. <https://doi.org/10.1080/20550324.2019.1710974>
- Shutova, T. G., Agabekov, V. E., & Lvov, Y. M. (2007). Reaction of radical cations with multilayers of tannic acid and polyelectrolytes. *Russian Journal of General Chemistry*, 77(9), 1494–1501. <https://doi.org/10.1134/S1070363207090034>
- Struzikiewicz, G., Zębala, W., & Rumian, K. (2016). Application of Taguchi method to optimization of cutting force and temperature during turning of difficult to cut materials. *Key Engineering Materials*, 686, 114–118. <https://doi.org/10.4028/www.scientific.net/KEM.686.114>
- Sun, M., Wang, Y., Yao, L., Li, Y., Weng, Y., & Qiu, D. (2022). Fabrication and Characterization of Gelatin/Polyvinyl Alcohol Composite Scaffold. *Polymers*, 14(7). <https://doi.org/10.3390/polym14071400>

- Syafri, E., Kasim, A., Abral, H., Sudirman, Sulungbudi, G. T., Sanjay, M. R., & Sari, N. H. (2018). Synthesis and characterization of cellulose nanofibers (CNF) ramie reinforced cassava starch hybrid composites. *International Journal of Biological Macromolecules*, 120, 578–586. <https://doi.org/10.1016/j.ijbiomac.2018.08.134>
- Treml, J., & Šmejkal, K. (2016). Flavonoids as Potent Scavengers of Hydroxyl Radicals. In *Comprehensive Reviews in Food Science and Food Safety* (Vol. 15, Issue 4, pp. 720–738). Blackwell Publishing Inc. <https://doi.org/10.1111/1541-4337.12204>
- Trombetta, D., Castelli, F., Sarpietro, M. G., Venuti, V., Cristani, M., Daniele, C., Saija, A., Mazzanti, G., & Bisignano, G. (2005). Mechanisms of antibacterial action of three monoterpenes. *Antimicrobial Agents and Chemotherapy*, 49(6), 2474–2478. <https://doi.org/10.1128/AAC.49.6.2474-2478.2005>
- Welvaert, M., & Rosseel, Y. (2013). On the definition of signal-to-noise ratio and contrast-to-noise ratio for fMRI data. *PLoS ONE*, 8(11). <https://doi.org/10.1371/journal.pone.0077089>
- Wijaya Kusuma, I., Kuspradini, H., Tangke Arung, E., Aryani, F., Min, Y.-H., Kim, J.-S., & Kim, Y.-U. (2011). BRIEF REPORT Biological Activity and Phytochemical Analysis of Three Indonesian Medicinal Plants, *Murraya koenigii*, *Syzygium polyanthum* and *Zingiber purpurea* 76 I.W. Kusuma et al. In *J Acupunct Meridian Stud* (Vol. 4, Issue 1).
- Woolf, P. *Chemical Process Dynamics and Controls*.
- Wu, H., Liao, D., Chen, X., Du, G., Li, T., Essawy, H., Pizzi, A., & Zhou, X. (2023). Functionalized Natural Tannins For Preparation of a novel non-isocyanate polyurea-based adhesive. *Polymer Testing*, 117. <https://doi.org/10.1016/j.polymertesting.2022.107853>
- Wu, Z., Wu, J., Peng, T., Li, Y., Lin, D., Xing, B., Li, C., Yang, Y., Yang, L., Zhang, L., Ma, R., Wu, W., Lv, X., Dai, J., & Han, G. (2017). Preparation and application of starch/polyvinyl alcohol/citric acid ternary blend antimicrobial functional food packaging films. *Polymers*, 9(3). <https://doi.org/10.3390/polym9030102>
- Xiao, D., Jiang, M., Zhang, X., Niu, N., Li, J., Liu, S., Chen, Z., & Li, S. (2020). Seeking Answers from Tradition: Facile Preparation of Durable Adhesive Hydrogel Using Natural Quercetin. *IScience*, 23(8). <https://doi.org/10.1016/j.isci.2020.101342>
- Xu, W., Cheng, Y., Guo, Y., Yao, W., & Qian, H. (2022). Effects of geographical location and environmental factors on metabolite content and immune activity of *Echinacea purpurea* in China based on metabolomics analysis. *Industrial Crops and Products*, 189. <https://doi.org/10.1016/j.indcrop.2022.115782>
- Yen, K. C., Mandal, T. K., & Woo, E. M. (2008a). Enhancement of bio-compatibility via specific interactions in polyesters modified with a bio-resourceful macromolecular ester containing polyphenol groups. *Journal of Biomedical Materials Research - Part A*, 86(3), 701–712. <https://doi.org/10.1002/jbm.a.31461>
- Yen, K. C., Mandal, T. K., & Woo, E. M. (2008b). Enhancement of bio-compatibility via specific interactions in polyesters modified with a bio-resourceful macromolecular ester containing polyphenol groups. *Journal of Biomedical Materials Research - Part A*, 86(3), 701–712. <https://doi.org/10.1002/jbm.a.31461>

- Yihun, F. A., Ifuku, S., Saimoto, H., & Yihun, D. A. (2021). Thermo-mechanically improved polyvinyl alcohol composite films using maleated chitin nanofibers as nano-reinforcement. *Cellulose*, 28(5), 2965–2980. <https://doi.org/10.1007/s10570-021-03719-8>
- Zhai, Y., Wang, J., Wang, H., Song, T., Hu, W., & Li, S. (2018). Preparation and characterization of antioxidative and UV-protective larch bark tannin/PVA composite membranes. *Molecules*, 23(8). <https://doi.org/10.3390/molecules23082073>

