

DAFTAR PUSTAKA

- Abd Razak, D. L., Abd Rashid, N. Y., Jamaluddin, A., Sharifudin, S. A., Abd Kahar, A., & Long, K. (2017). Cosmeceutical Potentials And Bioactive Compounds Of Rice Bran Fermented With Single And Mix Culture Of *Aspergillus Oryzae* And *Rhizopus Oryzae*. *Journal of the Saudi Society of Agricultural Sciences*, 16(2), 127–134.
- Akbari, S., Nour, A. H., & Yunus, R. M. (2020). Determination Of Phenolics And Saponins In Fenugreek Seed Extracted Via Microwave-Assisted Extraction Method At The Optimal Condition. *IOP Conference Series: Materials Science and Engineering*, 736(2), 022024.
- Alara, O. R., Abdurahman, N. H., & Olalere, O. A. (2018). Ethanolic extraction of bioactive compounds from *Vernonia amygdalina* leaf using response surface methodology as an optimization tool. *Journal of Food Measurement and Characterization*, 12(2), 1107–1122.
- Ardiana, M. (2023). *Jintan Hitam Pencegah Kerusakan Endotel Karena Rokok*. Airlangga University Press.
- Astuti, W. M., Dewi, E. N., & Kurniasih, R. A. (2019). Pengaruh Perbedaan Jenis Pelarut dan Suhu Pemanasan Selama Ekstraksi Terhadap Stabilitas Mikrokapsul Fikosianin dari *Spirulina platensis*. *Jurnal Ilmu Dan Teknologi Perikanan*, 1(1), 7–14.
- Aydar, A. Y., Aydın, T., Yılmaz, T., Kothakota, A., Claudia Terezia, S., Florin Leontin, C., & Pandiselvam, R. (2022). Investigation On The Influence Of Ultrasonic Pretreatment On Color, Quality And Antioxidant Attributes Of Microwave Dried *Inula Viscosa* (L.). *Ultrasonics Sonochemistry*, 90, 106184.
- Ayu, P., Hidayat, N. P., Ayu, G., Diah Puspawati, K., Luh, N., Yusasrini, A., Studi, P., Pangan, T., Pertanian, T., Kampus, U., Jimbaran, B., -Bali, B., Korespondensi, P., Gusti, I., Kadek, A., & Puspawati, D. (2022). Pengaruh Waktu dan Daya Microwave pada Metode Microwave Assisted Extraction (MAE) Terhadap Aktivitas Antioksidan dan Pigmen Ekstrak Daun Ubi kayu (*Manihot Utilissima* Pohl.) The Effect of Times and Power Using Microwave Assisted Extraction (MAE) Method on . *Itepa: Jurnal Ilmu Dan Teknologi Pangan*, 11(1), 134–146.
- Badan Pusat Statistik. (2016). *Statistik Perdagangan Luar Negeri – Impor 2016 Jilid I*. Badan Pusat Statistik Indonesia.
- Belwal, T., Ezzat, S. M., Rastrelli, L., Bhatt, I. D., Daglia, M., Baldi, A., Devkota, H. P., Orhan, I. E., Patra, J. K., Das, G., Anandharamakrishnan, C., Gomez-Gomez, L., Nabavi, S. F., Nabavi, S. M., & Atanasov, A. G. (2018). A Critical Analysis Of Extraction Techniques Used For Botanicals: Trends, Priorities, Industrial Uses And Optimization Strategies. *TrAC Trends in Analytical Chemistry*, 100, 82–102.
- Benfica, J., Morais, E. S., Miranda, J. S., Freire, M. G., de Cássia Superbi de Sousa, R., & Coutinho, J. A. P. (2021). Aqueous Solutions of Organic Acids as Effective Solvents for Levodopa Extraction from *Mucuna Pruriens* Seeds. *Separation and Purification Technology*, 274, 119084.
- Bourgou, S., Ksouri, R., Bellila, A., Skandrani, I., Falleh, H., & Marzouk, B. (2008). Phenolic Composition and Biological Activities of Tunisian *Nigella*

- Sativa L. Shoots and Roots. *Comptes Rendus - Biologies*, 331(1), 48–55.
- Boutemtam, L., Boukhatem, M. N., Messaoudi, M., Begaa, S., Benarfa, A., & Ferhat, M. A. (2020). *Understanding The Phenomena Of Extraction Of Essential Oils By The Microwave Accelerated Distillation Process: Case Of The Washington Navel Variety*.
- Cahayanti, I. A. P. A., Wartini, N. M., & Wrsiati Luh Putu. (2016). Pengaruh Suhu dan Waktu Ekstraksi Terhadap Karakteristik Pewarna Alami Buah Pandan (*Pandanus tectorius*). *Jurnal Rekayasa Dan Manajemen Agroindustri*, 4(2252), 32–41.
- Camel, V. (2000). Microwave-Assisted Solvent Extraction Of Environmental Samples. *TrAC Trends in Analytical Chemistry*, 19(4), 229–248.
- Cesa, S., Carradori, S., Bellagamba, G., Locatelli, M., Casadei, M. A., Masci, A., & Paolicelli, P. (2017). Evaluation Of Processing Effects On Anthocyanin Content And Colour Modifications Of Blueberry (*Vaccinium* Spp.) Extracts: Comparison Between HPLC-DAD And CIELAB Analyses. *Food Chemistry*, 232, 114–123.
- Choiriyah, N. A. (2017). Ekstraksi Senyawa Antosianin Dan Fenolik Rosella Ungu Dengan Variasi Pelarut. *Darussalam Nutrition Journal*, 1(1), 16.
- Diba, R. F., Yasni, S., & Yuliani, S. (2014). Nanoemulsifikasi Spontan Ekstrak Jintan Hitam dan Karakteristik Produk Enkapsulasinya. *Jurnal Teknologi Dan Industri Pangan*, 25(2), 134–139.
- Diniyah, N., & Lee, S.-H. (2020). Komposisi Senyawa Fenol Dan Potensi Antioksidan Dari Kacang-Kacangan: Review. *Jurnal Agroteknologi*, 14(01), 91.
- Doraja, H. ., Shovitri, M., & Kuswyasari, D. N. (2012). Biodegradasi Limbah Domestik Dengan Menggunakan Inokulum Alami Dari Tangki Septik. *JURNAL SAINS DAN SENI ITS*, 1(1), E-44-E-47.
- Enggiwanto, S., Istiqomah, F., Daniati, K., Roanisca, O., & Mahardika, R. G. (2018). Ekstraksi Daun Pelawan (*Tristanopsis Merguensis*) Sebagai Antioksidan Menggunakan Microwave Assisted Extraction (MAE). *Indonesian Journal of Pure and Applied Chemistry*, 1(2), 50.
- Ercoli, S., Cartes, J., Cornejo, P., Tereucán, G., Winterhalter, P., Contreras, B., & Ruiz, A. (2021). Stability Of Phenolic Compounds, Antioxidant Activity And Colour Parameters Of A Coloured Extract Obtained From Coloured-Flesh Potatoes. *LWT*, 136, 110370.
- Ferreira, L. F., Minuzzi, N. M., Rodrigues, R. F., Pauletto, R., Rodrigues, E., Emanuelli, T., & Bochi, V. C. (2020). Citric Acid Water-Based Solution For Blueberry Bagasse Anthocyanins Recovery: Optimization and Comparisons with Microwave-Assisted Extraction (MAE). *LWT*, 133, 110064.
- Fiddaril Izza, H., Yuni Susanti, D., Mariyam, S., & Dwi Saputro, A. (2023). Performance of Microwave Assisted Extraction of Proanthocyanidins from Red Sorghum Grain in Various Power and Citric Acid Concentration. *Journal of the Saudi Society of Agricultural Sciences*.
- Gisela, L. G., Marcela, B. M., & Linares, R. A. (2023). Kinetic Modelling Of Total Phenolic Compounds From *Ilex Paraguariensis* (St. Hil.) Leaves: Conventional And Ultrasound Assisted Extraction. *Food and Bioproducts*

- Processing*, 139, 75–88.
- Hameed, S., Imran, A., Nisa, M. un, Arshad, M. S., Saeed, F., Arshad, M. U., & Asif Khan, M. (2019). Characterization Of Extracted Phenolics From Black Cumin (*Nigella Sativa* Linn), Coriander Seed (*Coriandrum Sativum* L.), And Fenugreek Seed (*Trigonella Foenum-Graecum*). *International Journal of Food Properties*, 22(1), 714–726.
- Hari Prabowo, B., Nursaidah, Z., & Febby Safitri. (2019). Pengaruh H₂O₂ dalam Metode Koagulasi Pengolahan Air Payau Menggunakan Koagulan PAC dan Aluminium Sulfat. *Jurnal Teknik: Media Pengembangan Ilmu Dan Aplikasi Teknik*, 18(02), 101–107.
- Hermawati, Y., Rofieq, A., & Wahyono, P. (2018). Pengaruh Konsentrasi Asam Sitrat Terhadap Karakteristik Ekstrak Antosianin Daun Jati Serta Uji Stabilitasnya dalam Es Krim. *Seminar Nasional Pendidikan Biologi FKIP Universitas Muhammadiyah*, 4(1), 301–308.
- Ho, Y. S., & McKay, G. (1999). Pseudo-Second Order Model For Sorption Processes. *Process Biochemistry*, 34(5), 451–465.
- Inyang, U. E., Oboh, I. O., Etuk, B. R., Inyang, U. E., Oboh, I. O., & Etuk, B. R. (2018). Kinetic Models for Drying Techniques—Food Materials. *Advances in Chemical Engineering and Science*, 8(2), 27–48.
- Ismawati, N. (2016). Nilai pH, Total Padatan Terlarut, Dan Sifat Sensoris Yoghurt Dengan Penambahan Ekstrak Bit (*Beta Vulgaris* L.). *Jurnal Aplikasi Teknologi Pangan*, 5(3), 89–93.
- Jenssen, R., & Eltoft, T. (2008). A New Information Theoretic Analysis Of Sum-Of-Squared-Error Kernel Clustering. *Neurocomputing*, 72(1–3), 23–31.
- Jurinjak Tušek, A., Benković, M., Malešić, E., Marić, L., Jurina, T., Gajdoš Kljusurić, J., & Valinger, D. (2021). Rapid Quantification Of Dissolved Solids And Bioactives In Dried Root Vegetable Extracts Using Near Infrared Spectroscopy. *Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy*, 261, 120074.
- Karacabey, E. (2016). Optimization of Microwave-assisted Extraction of Thymoquinone from *Nigella sativa* L. Seeds. *Macedonian Journal of Chemistry and Chemical Engineering*, 35(2), 209–216.
- Karrar, E., Sheth, S., Wei, W., & Wang, X. (2020). Effect Of Microwave Heating On Lipid Composition, Oxidative Stability, Color Value, Chemical Properties, And Antioxidant Activity Of Gurum (*Citrullus lanatus* Var. *Colocynthis*) Seed Oil. *Biocatalysis and Agricultural Biotechnology*, 23, 101504.
- Kunarto, B., & Iswoyo. (2020). Kinetika Degradasi Ekstrak Antioksidan Buah Parijoto Muda (*Medinilla speciosa* Blume) pada Berbagai Intensitas dan Waktu Paparan Cahaya. *Prosiding Seminar Nasional Unimus*, 3(2013), 1184–1193.
- Lazuardi, R. N. M. (2010). Mempelajari Ekstraksi Pigmen Antosianin dari Kulit Manggis (*Garcinia mangostana* L.) dengan Berbagai Jenis Pelarut. *Skripsi*.
- Lopez-Avila, V., & Luque de Castro, M. D. (2014). Microwave-Assisted Extraction. *Reference Module in Chemistry, Molecular Sciences and Chemical Engineering*.
- Ly, B. C. K., Dyer, E. B., Feig, J. L., Chien, A. L., & Del Bino, S. (2020). Research

- Techniques Made Simple: Cutaneous Colorimetry: A Reliable Technique for Objective Skin Color Measurement. *Journal of Investigative Dermatology*, 140(1), 3-12.
- Mariod, A. A., Ibrahim, R. M., Ismail, M., & Ismail, N. (2009). Antioxidant Activity And Phenolic Content Of Phenolic Rich Fractions Obtained From Black Cumin (*Nigella Sativa*) Seedcake. *Food Chemistry*, 116(1), 306–312.
- Masota, N. E., Vogg, G., Heller, E., & Holzgrabe, U. (2020). Comparison Of Extraction Efficiency And Selectivity Between Low-Temperature Pressurized Microwave-Assisted Extraction And Prolonged Maceration. *Archiv Der Pharmazie*, 353(10), 2000147.
- Minatel, I. O., Borges, C. V., Ferreira, M. I., Gomez, H. A. G., Chen, C.-Y. O., & Lima, G. P. P. (2017). Phenolic Compounds: Functional Properties, Impact of Processing and Bioavailability. *Phenolic Compounds - Biological Activity*.
- Mustapa, A. N., Martin, A., Gallego, J. R., Mato, R. B., & Cocero, M. J. (2015). Microwave-Assisted Extraction Of Polyphenols From Clinacanthus Nutans Lindau Medicinal Plant: Energy Perspective And Kinetics Modeling. *Chemical Engineering and Processing: Process Intensification*, 97, 66–74.
- Muzolf-Panek, M., & Gliszczynska-Świgło, A. (2022). Extraction Optimization For The Antioxidants From *Nigella Sativa* Seeds Using Response Surface Methodology. *Journal of Food Measurement and Characterization*, 16(6), 4741–4753.
- Nurhidajah, Rosidi, A., Sya'di, Y. K., & Yonata, D. (2022). Efektivitas Berbagai Pelarut Organik Pada Ekstraksi Senyawa Fungsional Beras Hitam. *Agrointek : Jurnal Teknologi Industri Pertanian*, 16(1), 76–83.
- Nurika, I., Hidayat, N., Wignyanto, Suprayogi, Anggarini, S., & Azizah, N. (2022). *Rekayasa Bioproses*. Universitas Brawijaya Press.
- Pérez-Ramírez, I. F., Castaño-Tostado, E., Ramírez-De León, J. A., Rocha-Guzmán, N. E., & Reynoso-Camacho, R. (2015). Effect of stevia and citric acid on the stability of phenolic compounds and in vitro antioxidant and antidiabetic capacity of a roselle (*Hibiscus sabdariffa* L.) beverage. *Food Chemistry*, 172, 885–892.
- Priska, M., Peni, N., Carvallo, L., & Ngapa, Y. D. (2018). Antosianin dan Pemanfaatannya. *Cakra Kimia (Indonesian E-Journal of Applied Chemistry)*, 6(2), 79–97.
- Pujimulyani, D., Raharjo, S., Marsono, Y., & Santoso, U. (2010). Pengaruh Blanching Terhadap Aktivitas Antioksidan, Kadar Fenol, Flavonoid, dan Tanin Terkondensasi Kunir Putih (*Curcuma mangga* Val.). *Agritech*, 30(3), 141–147.
- Sanchez-Reinoso, Z., Mora-Adames, W. I., Fuenmayor, C. A., Darghan-Contreras, A. E., Gardana, C., & Gutiérrez, L. F. (2020). Microwave-Assisted Extraction Of Phenolic Compounds From Sacha Inchi Shell: Optimization, Physicochemical Properties And Evaluation Of Their Antioxidant Activity. *Chemical Engineering and Processing - Process Intensification*, 153, 107922.
- Sejati, A. D. (2012). Penetapan Kadar Flavonoid dan Fenolik Ekstrak Air Jinten Hitam (*Nigella sativa* L.) dan Uji Sitotoksik pada Sel Kanker Payudara MCF-7 dari Tiga Daerah : Habasyah, India dan Indonesia. *Pharmacon Jurnal Ilmiah*

Farmasi, Universitas Muhammadiyah Surakarta.

- Sharma, M., & Dash, K. K. (2022). Microwave And Ultrasound Assisted Extraction Of Phytocompounds From Black Jamun Pulp: Kinetic And Thermodynamics Characteristics. *Innovative Food Science & Emerging Technologies*, 75, 102913.
- Sonar, M. P., & Rathod, V. K. (2020). Microwave Assisted Extraction (MAE) Used As A Tool For Rapid Extraction Of Marmelosin From Aegle Marmelos And Evaluations Of Total Phenolic And Flavonoids Content, Antioxidant And Anti-Inflammatory Activity. *Chemical Data Collections*, 30.
- Sulaiman, C. T., Sadashiva, C. T., George, S., Goplakrishnan, V. K., & Balachandran, I. (2013). Chromatographic Studies and in vitro Screening for Acetyl Cholinesterase Inhibition and Antioxidant Activity of three Acacia Species from South India. *Analytical Chemistry Letters*, 3(2), 111–118.
- Surianti, N., Agung, I., & Puspawati, G. (2012). Pengaruh Konsentrasi Asam Sitrat Terhadap Karakteristik Ekstrak Pigmen Limbah Selaput Lendir Biji Terung Belanda (*Cyphomandra Beata* S.) Dan Aktivitas Antioksidannya. *Jurnal Ilmu Dan Teknologi Pangan (Itepa)*, 2(1), 1–10.
- Susanti, D. Y., Sediawan, W. B., Fahrurrozi, M., & Hidayat, M. (2020). Studies on Kinetics and Optimum Agitation of Phenolic Compound Extraction from Intact Red Sorghum. *Lecture Notes in Mechanical Engineering*, 755–767.
- Várady, M., Tauchen, J., Klouček, P., & Popelka, P. (2022). Effects of Total Dissolved Solids, Extraction Yield, Grinding, and Method of Preparation on Antioxidant Activity in Fermented Specialty Coffee. *Fermentation* 2022, Vol. 8, Page 375, 8(8), 375.
- Veggi, P. C., Martinez, J., & Meireles, M. A. A. (2013). Fundamentals Of Microwave Extraction. *Food Engineering Series*, 15–52.
- Zhao, R., Wei, M., Shi, G., Wang, X., Gao, H., Zhang, L., Yang, L., & Gu, H. (2021). One-Pot Process For Simultaneously Obtaining Oil And Sinigrin From Field Pennycress (*Thlaspi Arvense*) Seeds Using Microwave-Assisted Biphasic Extraction. *Industrial Crops and Products*, 166, 113483.