

DAFTAR PUSTAKA

- A, K., & Kusuma, F. 2004. *Meniran Penambah Daya Tahan Tubuh Alami*. Agromedia.
- Ahmad, I., Pertiwi, A. S., Kembaren, Y. H., Rahman, A., & Mun'im, A. 2018. Application of natural deep eutectic solvent-based ultrasonic assisted extraction of total polyphenolic and caffeine content from coffee beans (*Coffea Beans L.*) for instant food products. *Journal of Applied Pharmaceutical Science*, 8(8), 138–143.
- Ahmad, I., & Prabowo, W. C. 2020. OPTIMASI METODE EKSTRAKSI BERBANTU MIKROWAVE DENGAN PELARUT HIJAU (ASAM SITRAT-GLUKOSA) TERHADAP KADAR POLIFENOL TOTAL DARI DAUN KADAMBA (*Mitragyna speciosa* Korth. Havil) MENGGUNAKAN RESPONSE SURFACE METHODOLOGY. *Majalah Farmasi Dan Farmakologi*, 24(1), 11–16.
- Al, K., & Cornell, J. 1996. *Response Surface* (Second Ed). Marcell Dekker.
- Alegantina, S., Setyorini, H. A., & Triwahyuni. 2015. *PENGUJIAN MUTU DAN PENETAPAN KADAR FILANTIN PADA EKSTRAK ETANOL HERBA MENIRAN (PHYLLANTHUS NIRURI LINN)*. 43(1), 11–16.
- AOAC. 2012. Guidelines for Dietary Supplements and Botanicals. *Association of Official Analytical Chemists*, 1–9.
- AOAC. 2016. Guidelines for Standard Method Performance Requirements. *Journal of AOAC International and Official Method of Analysis*. 9.
- Badan Pengawas Obat dan Makanan Republik Indonesia. 2004. *Monografi Ekstrak Tumbuhan Obat Indonesia* (Vol 1). Badan Pengawas Obat dan Makanan RI.
- Bagalkotkar, G., Sagineedu, S. R., Saad, M. S., & Stanslas, J. 2006. Phytochemicals from *Phyllanthus niruri* Linn. and their pharmacological properties: a review. *Journal of Pharmacy and Pharmacology*, 58(12), 1559–1570.
- Bakirtzi, C., Triantafyllidou, K., Makris, D. P. 2016. Novel Lactic Acid-Based Natural Deep Eutectic Solvents: Efficiency in the Ultrasound-Assisted Extraction of Antioxidant Polyphenols from Common Native Greek Medicinal Plants. *Journal of Applied Research on Medicinal and Aromatic Plants*. 3:7-8.
- Blume, T. N. 2020. *Natural deep eutectic solvents ultrasound-assisted extraction (NADES-UAE) of trans-cinnamaldehyde and coumarin from cinnamon bark [Cinnamomum burmannii]*. 24(3), 389–398.
- Budiyanto, A., Besar, B., & Pascapanen, P. 2019. Pengaruh Suhu dan Waktu Ekstraksi Terhadap Karakter Pektin dari Ampas Jeruk Siam (*Citrus nobilis L.*). *Jurnal Penelitian Pascapanen Pertanian*, 5(2), 37–44.
- Chan, CC., Lam, H., Lee., Zang, X. 2004. Analytical Method Validation and Instrument Performance Verification. *Analytical Method Validation and Instrument Performance Verification*.

- Chemat, F., & Vian, M. . 2014. *Alternative Solvents of Natural Products Extraction*. Springer.
- Ching, J., Zhang, J. & Ambar, M. 2007. '12-Tungstophosphoric Acid Supported on MCM-41 for Esterification of Fatty Acid Under Solvent-Free Condition'. *Journal of Molecular Catalysis A*. 267. pp. 265-271.
- Choi, Y. H., van Spronsen, J., Dai, Y., Verberne, M., Hollmann, F., Arends, I. W. C. E., Witkamp, G. J., & Verpoorte, R. 2011. Are natural deep eutectic solvents the missing link in understanding cellular metabolism and physiology? *Plant Physiology*, 156(4), 1701–1705.
- Clara, M. 2018. Validasi Metode High Performance Liquid Chromatography (HPLC) Fase Terbalik Pada Penetapan Kadar Kafein Dalam Kopi Bubuk Murni Robusta Merek “X.”. *Skripsi*. Universitas Sanata Dharma.
- Dai, Y., van Spronsen, J., Witkamp, G. J., Verpoorte, R., & Choi, Y. H. 2013. Natural deep eutectic solvents as new potential media for green technology. *Analytica Chimica Acta*, 766, 61–68.
- Departemen Kesehatan Republik Indonesia. 2000. *Parameter Standar Umum Ekstrak Tumbuhan*. Direktorat Jendral POM-Depkes RI.
- Departemen Kesehatan Republik Indonesia. 2008. *Farmakope Herbal Indonesia (I)*. Departemen Kesehatan Republik Indonesia.
- Departemen Kesehatan Republik Indonesia. 2013. *Suplemen III Farmakope Herbal Indonesia (Edisi I)*. Kementerian Kesehatan Republik Indonesia.
- Departemen Kesehatan RI. 1995. *Farmakope Indonesia*. Edisi IV. Jakarta: DepKes RI.
- Easmin, M. S., Sarker, M. Z. I., Ferdosh, S., Shamsudin, S. H., Yunus, K. Bin, Uddin, M. S., Sarker, M. M. R., Akanda, M. J. H., Hossain, M. S., & Khalil, H. P. S. A. 2015. Bioactive compounds and advanced processing technology: *Phaleria macrocarpa* (sheff.) Boerl, a review. In *Journal of Chemical Technology and Biotechnology* (Vol. 90, Issue 6).
- Edwards, J. R. 2007. Polynomial Regression and Response Surface Methodology. in Ostroff, C dan Judge, T.A (ed). *Perspective on Organizational Fit*. Jossey-Bass. San Fransisco.
- Elfahmi, *et al.* 2006. Lignans from Cell Suspension Cultures of *Phyllanthus niruria* an Indonesian Medical Plant. *Journal of Natural Product*.
- Farris, S., & Piergiovanni, L. 2009. Optimization of manufacture of almond paste cookies using response surface methodology. *Journal of Food Process Engineering*, 32(1), 64–87.
- González, C. G., Mustafa, N. R., Wilson, E. G., Verpoorte, R., & Choi, Y. H. 2018. Application of natural deep eutectic solvents for the “green” extraction of vanillin from vanilla pods. *Flavour and Fragrance Journal*, 33(1).
- Gunst, R. F., Myers, R. H., & Montgomery, D. C. 1996. Response Surface Methodology: Process and Product Optimization Using Designed Experiments. *Technometrics*, 38(3).
- Gustavo González, A., & Ángeles Herrador, M. 2007. A practical guide to analytical method validation, including measurement uncertainty and accuracy profiles. *TrAC - Trends in*

- Analytical Chemistry*, 26(3), 227–238.
- Hammond, O. 2019. Deep Eutectic Solvents : Structure, Solvation and Synthesis. *University of Bath, October*.
- Hanani, E. 2015. *Analisis Fitokimia*. Buku Kedokteran EGC.
- Harbone, J. 1987. *Metode Fitokimia, Penuntun Cara Modern Mengekstraksi Tumbuhan* (Edisi Kedu). ITB.
- Harmita. Petunjuk Pelaksanaan Validasi Metode dan Cara Perhitungannya. *Majalah Ilmu Kefarmasian*. 1 (2): 163-178.
- Hayyan, A., Mjalli, F.S., Al-Nashef, I.M., Al-Wahaibi, T., Hashim, M.A. 2012. "Fruit Sugar-Based Deep Eutectic Solvents and Their Physical Properties". *Thermochimica Acta*, Elsevier B. V., Vol. 541, pp. 70-75.
- Leron, R. B., Soriano, A.N., Li, M.H. 2012. Densities and Refractive Indices of The Deep Eutectic Solvents (Choline Chloride + Ethylene Glycol or Glycerol) and Their Aqueous Mixtures at the Temperature Ranging From 298,15 to 333,15 K. *Journal of the Taiwan Institute of Chemical Engineers*. 43: 551-557.
- Lestari, P., Sari, B. L. dan Utami, N. F. 2019. Optimasi Metode Ekstraksi Berbantu Gelombang Mikro Terhadap Kadar Flavonoid dan Aktivasi Antioksidan Dari Daun Keji Beling (*Strobilanthes Crispa L.*) Puji', Pp. 1-16.
- Jupersio. 2017. *Analisi Kadar Flavonoid Ekstrak Etanol 70% Kulit Bawang Merah (Allium cepa L.) Hasil Ekstraksi Metode Maserasi dan MAE (Microwave Assisted Extraction)*. Univeristas Pakuan.
- Mangan, Y. 2003. *Cara Bijak Menaklukkan Kanker, Sehat Dengan Ramuan Tradisional*. Agromedika Pustaka.
- Meselhy, M. R., Abdel-Sattar, O. E., El-Mekkawy, S., EL-Desoky, A. M., Mohamed, S. O., Mohsen, S. M., Abdel-Sattar, E., & El-Halawany, A. 2020. Preparation of lignan-rich extract from the aerial parts of phyllanthus niruri using nonconventional methods. *Molecules*, 25(5).
- Montgomery, D. C. 2001. *Design and Analysis of Experiments* (Fifth Edit). John Wiley and Sons.
- Mourabet, M., Rhilassi, AE., Boujaady, HE., BennaniOZiatni, M., and Taitai, A, 2014. Use of Response Surface Methodology for Optimazation of Fluoride Adsorption In an Aquaous Solution by Brushite. *Arabian Journal of Chemistry*, 10(2): 2-11.
- Nasrulloh, R., Rafi, M., Wahyuni, W. T., Shimma, S., & Heryanto, R. 2018. HPLC fingerprint and simultaneous quantitative analysis of phyllanthin and hypophyllanthin for identification and authentication of Phyllanthus niruri from related species. *Revista Brasileira de Farmacognosia*, 28(5), 527–532.
- Nurdayanty, S. M., Suhendar, U., Utami, N. F., & Sutanto, D. 2020. PENGARUH BERBAGAI METODE EKSTRAKSI PADA PENENTUAN KADAR FLAVONOID EKSTRAK ETANOL DAUN ILER (*Plectranthus scutellarioides*). *FITOFARMAKA: Jurnal Ilmiah Farmasi*, 10(1), 76–83.

- Nuryanti, & Salimy, D. H. 2008. Metode permukaan respon dan aplikasinya pada optimasi eksperimen kimia. *Risalah Lokakarya Komputasi Dalam Sains Dan Teknologi Nuklir*, 21(021), 373–391.
- Olawale, M., Amuda, H., & Akabekwa, R. O. 2008. Estimating the Eutectic Composition of Simple Binary Alloy System Using Linear Geometry. *Leonardo Journal of Sciences*, 12.
- Paulucci, V. P., Couto, R. O., Teixeira, C. C. C., & Freitas, L. A. P. 2013. Optimization of the extraction of curcumin from *Curcuma longa* rhizomes. *Revista Brasileira de Farmacognosia*, 23(1), 94–100.
- Putra, D. P. 2010. *ISOLASI SENYAWA FILANTIN DARI DAUN MENIRAN (Phyllanthus niruri Linn)* [Universitas Muhammadiyah Surakarta].
- Radosevic, K, Bubalo, M.C., Srcek, V.G., Grgas, ., Dragicevic, T.L., Redovnikovic, I,R, 2014. Evaluation of Toxicity and Biodegradability of Choline Chloride Based Deep Eutectic Solvents. *Ecotoxicology and Environmental Safety*. 112:46-53.
- Ratnawati, S. E., Ekantari, N., Pradipta, R. W., & Paramita, B. L. 2018. The Application of Response Surface Methodology (RSM) on the Optimization of Catfish Bone Calcium Extraction. *Jurnal Perikanan Universitas Gadjah Mada*, 20(1), 41. <https://doi.org/10.22146/jfs.35663>
- Riswanto, F. D. O., Rohman, A., Pramono, S., & Martono, S. 2019. Application of response surface methodology as mathematical and statistical tools in natural product research. *Journal of Applied Pharmaceutical Science*, 9(10), 125–133.
- Rivai, H., Septika, R., & Boestari, A. 2013. Karakterisasi Ekstrak Herba Meniran (*Phyllanthus niruri* Linn) dengan Analisa Fluoresensi. *Jurnal Farmasi Higea*, 5(2), 15–23.
- Robbinson, T. 1995. *Kandungan Organik Tumbuhan Tinggi* (Edisi Keen). ITB.
- Rostagno, M. A and J. M. Prado. 2013. *Natural Product Extraction*, RSC Publishing, Cambridge.
- Santos, H. M., Lodeiro, C., & Capelo-Martínez, J. L. 2009. The Power of Ultrasound. In *Ultrasound in Chemistry: Analytical Applications*.
- Sarker, S. D., Latif, Z., & Gray, A. I. 2006. *Natural Products Isolation* (Second Edi). Humana Press Inc.
- Sasongko, A., Nugroho, R. W., Setiawan, C. E., Utami, I. W., & Pusfitasari, M. D. 2018. Aplikasi Metode Nonkonvensional Pada Ekstraksi Bawang Dayak. *JTT (Jurnal Teknologi Terpadu)*, 6(1), 8.
- Savitri, I., Suhendra, L., & Wartini, N. M. 2017. Pengaruh jenis pelarut pada metode maserasi terhadap karakteristik ekstrak *Srgassum polycystum*. *Rekayasa Dan Manajemen Agroindustri*, 5(3), 93–101.
- Susanti, M, Dachriyams. 2017. *Kromatografi Cair Kinerja Tinggi*. Padang. Lembaga Pengembangan Teknologi Informasi dan Komunikasi (LPTIK) Universitas Andalas.
- Sholihah, M. 2016. Ultrasonic-Assisted Extraction Antioksidan dari Kulit Manggis. In *Tesis*. Sekolah Pascasarjana Institut Pertanian Bogor.

- Sholikhah, E. N., & Wahyuono, S. 2007. *Antiplasmodial activity of fractions isolated from methanolic extract of meniran herb (Phyllanthus niruri L) traditionally used to treat malaria*. 39(1), 7–13.
- Syamasundar, K. V., Singh, B., Singh Thakur, R., Husain, A., Yoshinobu, K., & Hiroshi, H. 1985. Antihepatotoxic principles of Phyllanthus niruri herbs. *Journal of Ethnopharmacology*, 14(1), 41–44.
- Taofiq, O., Corrêa, R. C. G., Barros, L., Prieto, M. A., Bracht, A., Peralta, R. M., González-Paramás, A. M., Barreiro, M. F., & Ferreira, I. C. F. R. 2019. A comparative study between conventional and non-conventional extraction techniques for the recovery of ergosterol from *Agaricus blazei* Murrill. *Food Research International*, 125(May 2018), 108541.
- Toledo, R. T. 2007. *Flundamentals of Food Process Engineering Third Edition* (Third Edit). Springer.
- Verschuuren, G. 2014. *Excel 2013 for Scientists*. Holy Macro Books.
- Wan, J. Y., Li, P., Cheng, X. Y., Qi, L. W. 2011. Ultrasonic/microwave Assisted Extraction and Diagnostic Ion Filtering Strategy by Liquid Chromatography-Quadrupole Time-of-Flight Mass Spectrometry for Rapid Characterization of Flavonoids in *Spatholobus Suberectus*. *Journal of Chromatography A*, 1218(34), 5774-5786.
- Wen, L., Lin, L., You, L., Yang, B., Jiang, G., & Zhao, M. 2011. Ultrasound-assited extraction and structural identification of polysaccharides from *Isodon lophanthoides* var. *gerardianus* (Bentham) H. Hara. *Carbohydrate Polymers*, 85(3).
- Widyaningsih, T. D., Wijayanti, N., & Nugrahini, N. I. P. 2017. *Pangan Fungsional: Aspek Kesehatan, Evaluasi, dan Regulasi* (Cetakan Pe). UB Press.
- Williamson, S. T., Shahbaz, K., Mjalli, F. S., AlNashef, I. M. & Farid, M. M. 2017. Application of Deep Eutectic Solvents As Catalysts for the Esterification of Oleic Acid With Glycerol. *Renewable Energy*. Elsevier Ltd. 114. pp. 480-488.
- Yolmeh, M., & Jafari, S. M. 2017. Applications of Response Surface Methodology in the Food Industry Processes. In *Food and Bioprocess Technology* (Vol. 10, Issue 3).
- Zhang, Q., Vigier K.D.O., Royer, S., Jerome, F. 2012. Deep Eutectic Solvents: Syntheses, Properties and Applications. *Chem. Soc. Rev.* 41: 7108-7146.