

DAFTAR PUSTAKA

- Alonso-Amelot, M.E., 2016. Multitargeted Bioactive Materials of Plants in the Curcuma Genus and Related Compounds: Recent Advances. *Studies in Natural Products Chemistry*, **47**: 111–200.
- Amalraj, A., Pius, A., Gopi, Sreerag, dan Gopi, Sreeraj, 2017. Biological activities of curcuminoids, other biomolecules from turmeric and their derivatives – A review. *Journal of Traditional and Complementary Medicine*, **7**: 205–233.
- Awin, T., Mediani, A., Maulidiani, Shaari, K., Faudzi, S.M.M., Sukari, M.A.H., dkk., 2016. Phytochemical profiles and biological activities of Curcuma species subjected to different drying methods and solvent systems: NMR-based metabolomics approach. *Industrial Crops and Products*, **94**: 342–352.
- Bejar, E., 2018. Root and Rhizome, and Root and Rhizome Extracts. *Botanical Adulterants Bulletin*, 11.
- Biancolillo, A. dan Marini, F., 2018. Chemometrics Applied to Plant Spectral Analysis, dalam: *Comprehensive Analytical Chemistry*. Elsevier, hal. 69–104.
- Booker, A., Frommenwiler, D., Johnston, D., Umealajekwu, C., Reich, E., dan Heinrich, M., 2014. Chemical variability along the value chains of turmeric (*Curcuma longa*): A comparison of nuclear magnetic resonance spectroscopy and high performance thin layer chromatography. *Journal of Ethnopharmacology*, **152**: 292–301.
- Brereton, R.G., 2007. Applied Chemometrics for Scientists. *John Wiley & Sons, Ltd*, 397.
- Cadet, F., Garrigues, S., dan de la Guardia, M., 2012. Quantitative Analysis, Infrared Update based on the original article by Frederic Cadet, *Encyclopedia of Analytical Chemistry*, © 2000, John Wiley & Sons, Ltd., dalam: Meyers, R.A. (Editor), *Encyclopedia of Analytical Chemistry*. John Wiley & Sons, Ltd, Chichester, UK.
- de Carvalho Lopes, D. dan Steidle Neto, A.J., 2018. Classification and Authentication of Plants by Chemometric Analysis of Spectral Data, dalam: *Comprehensive Analytical Chemistry*. Elsevier, hal. 105–125.

- Dhakal, S., Chao, K., Schmidt, W., Qin, J., Kim, M., dan Chan, D., 2016. Evaluation of Turmeric Powder Adulterated with Metanil Yellow Using FT-Raman and FT-IR Spectroscopy 15.
- Dhanya, K., Syamkumar, S., Siju, S., dan Sasikumar, B., 2011. Sequence characterized amplified region markers: A reliable tool for adulterant detection in turmeric powder. *Food Research International*, **44**: 2889–2895.
- Dixit, S., Purshottam, S.K., Khanna, S.K., dan Das, M., 2009. Surveillance of the quality of turmeric powders from city markets of India on the basis of curcumin content and the presence of extraneous colours. *Food Additives & Contaminants: Part A*, **26**: 1227–1231.
- Friis, I., Balslev, H., dan selskab, K.D. videnskabernes, 2005. *Plant Diversity and Complexity Patterns: Local, Regional and Global Dimensions : Proceedings of an International Symposium Held at the Royal Danish Academy of Sciences and Letters in Copenhagen, Denmark, 25-28 May, 2003*. Kgl. Danske Videnskabernes Selskab.
- González, A. dan Herrador, M., 2007. A practical guide to analytical method validation, including measurement uncertainty and accuracy profiles. *TrAC Trends in Analytical Chemistry*, **26**: 227–238.
- Günzler, H. dan Gremlich, H.U., 2002. *IR Spectroscopy: An Introduction*. Wiley.
- ICH, 2015. International Conference On Harmonisation Of Technical Requirements For Registration Of Pharmaceuticals For Human Use, dalam: *Handbook of Transnational Economic Governance Regimes*. Brill, hal. 1041–1054.
- Jung, Y., Lee, J., Kim, H.K., Moon, B.C., Ji, Y., Ryu, D.H., dkk., 2012. Metabolite profiling of Curcuma species grown in different regions using 1H NMR spectroscopy and multivariate analysis. *Analyst*, **137**: 5597–5606.
- Kanaya, I.A., 2014. Daya Saing dan Permintaan Ekspor Produk Biofarmaka Indonesia di Negara Tujuan Utama Periode 2003-2012. *Jurnal Manajemen*, **11**: 16.
- Kealey, D. dan Haines, P.J., 2002. *BIOS Instant Notes in Analytical Chemistry*. Garland Science.
- Kim, H.K., Choi, Y.H., dan Verpoorte, R., 2010. NMR-based metabolomic analysis of plants. *Nature Protocols*, **5**: 536–549.

- Kohl, S.M., Klein, M.S., Hochrein, J., Oefner, P.J., Spang, R., dan Gronwald, W., 2012. State-of-the art data normalization methods improve NMR-based metabolomic analysis. *Metabolomics*, **8**: 146–160.
- Li, S., Yuan, W., Deng, G., Wang, P., Yang, P., dan Aggarwal, B.B., 2011. Chemical Composition and Product Quality Control of Turmeric (*Curcuma longa* L.). *Pharmaceutical Crops*, **2**: 28–54.
- Li, X., McCord, E.F., Baiagern, S., Fox, P., Howell, J.L., Sahoo, S.K., dkk., 2011. 2D-NMR studies of a model for Krytox® fluoropolymers. *Magnetic Resonance in Chemistry*, **49**: 413–424.
- Li, Y.-S. dan Church, J.S., 2014. Raman spectroscopy in the analysis of food and pharmaceutical nanomaterials. *Journal of Food and Drug Analysis*, **22**: 29–48.
- Miller, J., 2005. A practical guide to performance measurement. *Journal of Corporate Accounting & Finance*, **16**: 71–75.
- Miller, J.N. dan Miller, J.C., 2010. *Statistics and Chemometrics for Analytical Chemistry*, 6. ed. ed. Prentice Hall, Harlow.
- Parvathy, V.A., Swetha, V.P., Sheeja, T.E., dan Sasikumar, B., 2015. Detection of plant-based adulterants in turmeric powder using DNA barcoding. *Pharmaceutical Biology*, **53**: 1774–1779.
- Pavia, D.L., Lampman, G.M., Kriz, G.S., dan Vyvyan, J.A., 2008. *Introduction to Spectroscopy*. Cengage Learning.
- Poole, C.F., 2003. Chapter 6 - Thin-Layer Chromatography, dalam: Poole, C.F. (Editor), *The Essence of Chromatography*. Elsevier Science, Amsterdam, hal. 499–567.
- Priyadarsini, K., 2014. The Chemistry of Curcumin: From Extraction to Therapeutic Agent. *Molecules*, **19**: 20091–20112.
- Rafi, M., Rohaeti, E., Miftahudin, A., dan Darusman, L.K., 2011. DIFFERENTIATION OF *Curcuma longa*, *Curcuma xanthorrhiza* and *Zingiber cassumunar* 4.
- Rodriguez-Saona, L.E., Giusti, M.M., dan Shotts, M., 2016. Advances in Infrared Spectroscopy for Food Authenticity Testing, dalam: *Advances in Food Authenticity Testing*. Elsevier, hal. 71–116.

- Rohman, A., Setyaningrum, D.L., dan Riyanto, S., 2014. FTIR Spectroscopy Combined with Partial Least Square for Analysis of Red Fruit Oil in Ternary Mixture System. *International Journal of Spectroscopy*, **2014**: 1–5.
- Rolin, D., Deborde, C., Maucourt, M., Cabasson, C., Fauvelle, F., Jacob, D., dkk., 2013. High-Resolution 1H-NMR Spectroscopy and Beyond to Explore Plant Metabolome, dalam: *Advances in Botanical Research*. Elsevier, hal. 1–66.
- Rubio-Diaz, D.E. dan Rodriguez-Saona, L.E., 2010. Application of Vibrational Spectroscopy for the Study of Heat-Induced Changes in Food Components, dalam: Chalmers, J.M. dan Griffiths, P.R. (Editor), *Handbook of Vibrational Spectroscopy*. John Wiley & Sons, Ltd, Chichester, UK.
- Santiago, M. dan Strobel, S., 2013. Thin Layer Chromatography, dalam: *Methods in Enzymology*. Elsevier, hal. 303–324.
- Sasikumar, B., Syamkumar, S., Remya, R., dan John Zachariah, T., 2004. PCR Based Detection of Adulteration in the Market Samples of Turmeric Powder. *Food Biotechnology*, **18**: 299–306.
- Sherma, J., 2013. *Handbook of Thin-Layer Chromatography* 1356.
- Simmler, C., Graham, J.G., Chen, S.-N., dan Pauli, G.F., 2017. Integrated analytical assets aid botanical authenticity and adulteration management. *Fitoterapia*, .
- Stuart, B.H., 2004. *Infrared Spectroscopy: Fundamentals and Applications*. John Wiley & Sons.
- Tanaka, K., Kuba, Y., Sasaki, T., Hiwatashi, F., dan Komatsu, K., 2008. Quantitation of Curcuminoids in Curcuma Rhizome by Near-infrared Spectroscopic Analysis. *Journal of Agricultural and Food Chemistry*, **56**: 8787–8792.
- van der Kooy, F., Maltese, F., Hae Choi, Y., Kyong Kim, H., dan Verpoorte, R., 2009. Quality Control of Herbal Material and Phytopharmaceuticals with MS and NMR Based Metabolic Fingerprinting. *Planta Medica*, **75**: 763–775.
- Wang, J., Jun, S., Bittenbender, H.C., Gautz, L., dan Li, Q.X., 2009. Fourier Transform Infrared Spectroscopy for Kona Coffee Authentication. *Journal of Food Science*, **74**: C385–C391.
- Wichitnithad, W., Jongaroonngamsang, N., Pummangura, S., dan Rojsitthisak, P., 2008. 'Chemical variability along the value chains of turmeric (*Curcuma longa*): A comparison of nuclear magnetic resonance spectroscopy and high

performance thin layer chromatography - ScienceDirect', . URL:
<https://www.sciencedirect.com/science/article/pii/S0378874113009240>
(diakses tanggal 8/8/2018).

Windarsih, A., Rohman, A., dan Swasono, R.T., 2018. Application of H-NMR metabolite fingerprinting and chemometrics for the authentication of *Curcuma longa* adulterated with *Curcuma manga*. *Journal of Applied Pharmaceutical Science*, **8**: 75–81.