

DAFTAR PUSTAKA

- Anggraeni, T., 2017. *Proses dan Manfaat Teh*. Padang: Penerbit Erka.
- Alam, N., Bristi, N. J., dan Rafiquzzaman., 2012. Review on *in vivo* and *in vitro* methods evaluation of antioxidant activity. *Saudi Pharmaceutical Journal*, 21: 143–152.
- Augustine, O. O., 2011. Evaluation of the Antioxidant Effects of *Hibiscus sabdariffa* calyx extracts on 2,4-dinitrophenylhydrazine induced oxidative damage in rabbits. *Webmed Central*, 2(10): WMC00283.
- Agarwal, U., Pathak, D. P., Bhutani, R., Kapoor, G., dan Kant, R., 2017. Review on *Camellia sinensis*: Nature’s Gift. *International Journal of Pharmacognosy and Phytochemical Research*, 9(8), p. 1119–1126.
- Arksey, H., dan O’Malley, L., 2005. Scoping Studies: Towards a Methodological Framework. *International Journal of Social Research Methodology*, 8(1), p. 19–32.
- Bahorun, T., Soobrattee, M. A., Luximon-Ramma, V., Aruoma, O. I., 2006. Free radicals and antioxidants in cardiovascular health and disease. *Internet Journal of Medical Update*, Vol. 1, p. 1–17.
- Bi, W., He, C., Ma, Y., Shen, J., Zhang, L. H., Peng, Y., dan Xiao, P., 2015. Investigation of free amino acids, total phenolics, antioxidant activity and purine alkaloids to assess the health properties of non-*Camellia* tea. *Acta Pharmaceutica Sinica B*.
- Cassol, L., Rodrigues, E., dan Norena, C. P. Z., 2019. Extracting phenolic compounds from *Hibiscus sabdariffa* L. calyx using microwave assisted extraction. *Industrial Crops and Products*, 133, p. 168–177.

- Charles, D. J., 2013. *Antioxidant Properties of Spices, Herbs and Other Sources*. New York: Springer.
- Da-Costa-Rocha, I., Bonnlaender, B., Sievers, H., Pischel, I., dan Heinrich, M., 2014. *Hibiscus sabdariffa* L. – A phytochemical and pharmacological review. *Food Chemistry*, 165:424–443.
- Dangles, O., dan Fenger, J., 2018. The Chemical Reactivity of Anthocyanins and Its Consequences in Food Science and Nutrition. *Molecules*, 2018, 23, 1970.
- Das, A., Kalita, A., Raychaiudhuri, U., dan Chakraborty, R., 2019. Synergistic effect of herbal plant extract (*Hibiscus sabdariffa*) in maintain the antioxidant activity of decaffeinated green tea from various parts of Assam. *J Food Sci Technol*, 56, p. 5009–5016.
- Departemen Kesehatan RI. 2000. *Parameter Standar Umum Ekstrak Tumbuhan Obat*. Jakarta: Departemen Kesehatan RI.
- Departemen Kesehatan RI. 2014. *Farmakope Indonesia*. Edisi V. Jakarta: Departemen Kesehatan RI.
- Destiani, P. D., dan Lung, S. K. J., 2017. Uji aktivitas antioksidan vitamin a, c, e dengan menggunakan metode DPPH. *Farmaka*, Vol. 15, p. 53–62.
- Duy, N. Q., Thoai, H. A., Lam, T. D., dan Le, X. T., 2019. Effects of different extraction solvent systems on total phenolic, total flavonoid, total anthocyanin contents and antioxidant activities of *Roselle* (*Hibiscus sabdariffa* L.) extracts. *Asian Journal of Chemistry*, Vol. 31, No. 11, p. 2517–2521.
- Ege, S. N., 1994. *Organic Chemistry: Structure and Reactivity 3rd edition*. Toronto: D. C Health and Company.
- Fernandez-Arroyo, S., Rodriguez-Medina, I. C., Beltran-Debon, R., Pasini, F., Joven, J., Micol, V., Segura-Carretero, A., Fernandez-Gutierrez, A., 2011. Quantification of the polyphenolic fraction and *in vitro*

- antioxidant and *in vivo* anti-hyperlipemic activities of *Hibiscus sabdariffa* aqueous extract. *Food Research International*, 44(2011): 1490–1495.
- Forester, S. C., dan Lambert, J. D., 2011. The role of antioxidant versus prooxidant effect of green tea polyphenols in cancer prevention. *Molecular Nutrition and Food Research*, Vol. 55(6)
- Fulder, S., 2004. *Khasiat teh hijau. Terjemahan*. Jakarta: PT. Prestasi Puskarya.
- Gandjar, I. G., dan Rohman, A., 2007. *Kimia Farmasi Analisis*. Yogyakarta: Pustaka Pelajar, hal. 220–262.
- Gandjar, I. G., dan Rohman, A., 2012. *Analisis Obat Secara Spektroskopi dan Kromatografi*, Yogyakarta: Pustaka Pelajar, p. 59–93, 468–490.
- Genestra, M., 2007. Oxy radicals, Redox-Sensitive Signalling Cascades and Antioxidants: Review. *Cell Signals*. Vol. 19, p. 1807–1819.
- Ghani, Mohammad A., 2002. *Dasar-dasar Budidaya Teh*. Buku Pintar Mandor Cetakan Pertama. Jakarta: Penebar Swadaya.
- Gulcin, I., 2020. Antioxidants and antioxidant methods: an updated overview. *Archives of Toxicology*, 94:651–715.
- Gummadi, S., dan Kommoju, M., 2019. Colorimetric Approaches to Drug Analysis and Applications – A review. *American Journal of PharmTech Research*, 9(01), p. 14–37.
- Guyton, A., dan Hall, J. E., 1996. *Fisiologi Kedokteran 9th edition*. Jakarta: Penerbit Buku Kedokteran EGC, p. 604.
- Halliwell, B., dan Gutteridge, J. M. C., 1991. *Free radicals in biology and medicine*. Oxford: Clarendon Press, p. 825–833.
- Handa, S. S., 2008. *Extraction technologies for Medical and Aromatic Plants*. Trieste: International Centre For Science and High Technology (ICS-UNIDO), p. 21–23.

- Hartoyo., 2003. *Teh dan Khasiatnya bagi Kesehatan*. Yogyakarta: Kanisius.
- He, Q., Lv, Y., Zhou, L., dan Shi, B., 2010. Simultaneous determination of caffeine and catechins in tea extracts by HPLC. *Journal of Liquid Chromatography and Related Technologies*, 33:491–498.
- Heim, K. E., Tagliaferro, A. R., dan Bobilya, D. J., 2002. Flavonoid Antioxidants: Chemistry, Metabolism, and Structure Activity Relationships. *Journal of Nutritional Biochemistry*, 13(2002), p. 572–584.
- Higdon, J. V., dan Frei, B., 2007. Coffee and Health: A Review of Recent Human Research. *Critical Reviews in Food Science and Nutrition*, 40:101–123.
- Hilal, Y., 2017. Morphology, Manufacturing, Types, Composition and Medicinal Properties of Tea. *Journal of Basic and Applied Plant Sciences*, Vol. 1(2), p. 1–10.
- Hu, J., Webster, D., Cao, J., dan Shao, A., 2018. The Safety of Green Tea and Green Tea Extract Consumption in Adults – Results of a systematic Review. *Regulatory Toxicology and Pharmacology*, 95(2018), p. 412–433.
- Jabeur, I., Pereira, E., Barros, L., Calhelha, R. C., Sokovic, M., Oliviera, M. B. P. P., dan Ferreira, I. C. F. R., 2017. *Hibiscus sabdariffa* L. as a source of nutrients, bioactive compounds and colouring agents. *Food Research International*, 100, p. 717–723.
- Jigisha, A., Nishant, R., Navin, K., dan Pankaj, G., 2012. Green tea: A magical herb with miraculous outcomes. *International Research Journal of Pharmacy*, 3(5), p. 139–148.
- Jung, E. K., Kim, Y. J., dan Joo, N., 2013. Physicochemical properties and antimicrobial activity of Roselle (*Hibiscus sabdariffa* L.). *J Sci Food Agric*, 93:3769–3776.

- Khoo, H. E., Azlan, A., Tang, S. T., dan Lim, S. M., 2017. Anthocyanidins and anthocyanins: colored pigments as food, pharmaceutical ingredients, and the potential health benefits. *Food and Nutrition Research*, Vol. 61, 1361779.
- Koo, M. W. L., dan Cho, C. H., 2004. Pharmacological effects of green tea on the gastrointestinal system. *European Journal of Pharmacology*, 500(1-3), p. 177–185.
- Kumalaningsih, S., 2006. *Antioksidan Alami Penangkal Radikal Bebas: Sumber, Manfaat, Cara Penyediaan dan Pengolahan*. Surabaya: Trubus Agrisarana, p. 7–22.
- Kumar, S., 2011. Free Radicals and Antioxidants: Human and Food System. *Advances in Applied Science Research*, 2(1):129–135.
- Lawenda, B. D., Kelly, K. M., Ladas, E. J., Sagar, S. M., Vickers, A., dan Blumberg, J.B., 2008. Should Supplemental Antioxidant Administration Be Avoided During Chemotherapy and Radiation Therapy?. *J Natl Cancer Inst*, 100:773–783.
- Li, F., Wang, Y., Li, D., Chen, Y., Qiao, X., Fardous, R., Lewandowski, A., Liu, J., Chan, T., dan Dou, Q. P., 2018. Perspectives on the recent developments with green tea polyphenols in drug discovery. *Expert Opinion on Drug Delivery*, 13(7): 643–660.
- Maesaroh, K., Kurnia, D., dan Al Anshori, J., 2018. Perbandingan metode uji aktivitas antioksidan DPPH, FRAP, dan FIC terhadap asam askorbat, asam galat dan kuersetin. *Chimica et Natura Acta*, 6(2), p. 93–100.
- Mahmood, T., Naveed, A., Khan, B. A., 2010. Tea morphology, characteristics, and medicinal properties of *Camellia sinensis* tea. *Journal of Medicinal Plants Research*, Vol. 4(19), p. 2028–2033.

- Maiuolo, J., Oppedisano, F., Gratteri, S., Muscoli, C., dan Mollace, V., 2015. Regulation of Uric Acid Metabolism and Excretion. *International Journal of Cardiology* (2015), p. 1–7.
- Mardiah, S., Ashadi, R. W., dan Rahayu, A., 2009. *Budi daya dan pengolahan rosella si merah segudang manfaat*. Jakarta: Agromedia Pustaka.
- McKay, D. L., dan Blumberg, J. B., 2002. The role of tea in human health: An update. *Journal of the American College of Nutrition*, Vol. No. 1, p. 1–13.
- McMurry, J., 2011. *Fundamentals of Organic Chemistry*. Belmont: Brooks/Cole, Cengage Learning.
- Miura, Y., Chiba, T., Tomita, I., Koizumi, H., Miura, S., Umegaki, K., Hara, Y., dan Ikeda, M., 2001. Tea catechins prevent the development of atherosclerosis in apoprotein e-deficient mice. *The Journal of Nutrition*, 131(1), p. 27–32.
- Molyneux, P., 2004. The use of stable free radical diphenylpicryl-hydrazyl (DPPH) for estimating antioxidant activity. *Songklanakarinn J. Sci. Technol*, 26(2), p. 211–219.
- Mulya, H. M., dan Suharman., 1995. *Analisis Instrumental*. Surabaya: Airlangga University Press, p. 33–41.
- Murray, R. K., Bender, D. A., Botham, K. M., Kennelly, P. J., Rodwell, V. W., dan Weil, P. A., 2009. *Harper's Illustrated Biochemistry 28th edition*. New York: McGraw Hill, p. 482–486.
- Musial, C., Kuban-Jankowska, A., dan Gorska-Ponikowska, M., 2020. Beneficial properties of green tea catechins. *International Journal of Molecular Sciences.*, 21, 1744.
- Mut-Salud, N., Alvarez, P. J., Garrido, J. M., Carrasco, E., Aranega, A., dan Rodriguez-Serrano, F., 2016. Antioxidant Intake and Antitumor

- Therapy: Toward Nutritional Recommendations for Optimal Results. *Oxid Med Cell Longev*, p. 1–19.
- Namita, P., Mukesh, R., dan Vijay, KJ., 2012. Camellia sinensis (green tea): A review. *Global Journal of Pharmacology*, 6(2), p. 52–59.
- Ngamjarus, C., Pattanittum, P., dan Somboonporn, C., 2010. Roselle for hypertension in adult (Review). *Cochrane Database of Systematic Reviews*, Issue 1.
- Olszowy-Tomczyk, M., 2019. Synergistic, antagonistic and additive antioxidant effects in the binary mixtures. *Phytochem Rev*, 19:63–103.
- Paschka, A. G., Butler, R., dan Young, C. Y. 1998. Black tea and mammary gland carcinogenesis by 7,12-dimethylbenz[a]anthracene in rats fed control or high fats diets. *Carcinogenesis*, 19:1269–1273.
- Pham-Huy, L. A., He, H., Pham-Huy, C., 2008. Free radicals, antioxidants in disease and health. *International Journal of Biomedical Science*, 4(2), p. 89–96.
- Phaniendra, A., Jestadi, D.B., dan Periyasamy, L., 2015. Free Radicals: Properties, Sources, Targets, and Their Implication in Various Diseases. *Ind J Clin Biochem*, 30(1):11–26.
- Piovesana, A., Rodrigues, E., dan Norena, C. P. Z., 2018. Composition analysis of carotenoids and phenolic compounds and antioxidant activity from hibiscus calyces (*Hibiscus sabdariffa* L.) by HPLC-DAD-MS/MS. *Phytochemical Analysis*, 2018:1–10.
- Polsjak, B., Glavan, U., dan Dahmane, R., 2011. Skin Cancer, Free Radicals and Antioxidants. *International Journal of Cancer Research and Prevention*, Volume 4, Number 3, p. 193–217.
- Preciado-Saldana, A. M., Dominguez-Avila, J. A., Ayala-Zavala, J. F., Villegas-Ochoa, M. A., Sayago-Ayerdi, S. G., Wall-Medrano, A.,

- Gonzalez-Cordova, A. F., dan Gonzalez-Aguilar, G. A., 2019. Formulation and characterization of an optimized functional beverage from hibiscus (*Hibiscus sabdariffa* L.) and green tea (*Camellia sinensis* L.). *Food Science and Technology International*, 0(0), p. 1–15.
- Rahman, K., 2007. Studies on Free Radicals, Antioxidants and Co-Factors. *Clinical Interventions in Aging*, 2(2), p 219–236.
- Reygaert, W. C., 2018. Green tea catechins: Their use in treating and preventing infectious diseases. *Biomed Research International*, Vol. 2018, p. 1–9.
- Riaz, G., dan Chopra, R., 2018. A review on phytochemistry and therapeutic uses of *Hibiscus sabdariffa* L. *Biomedicine and Pharmacotherapy*, 102:575–586.
- Roy, M. K., Koide, M., Rao, T. P., Okubo, T., Ogasawara, Y., dan Juneja, L. R., 2010. ORAC and DPPH assay comparison to assess antioxidant capacity of tea infusions: Relationship between total polyphenol and individual catechin content. *International Journal of Food Sciences and Nutrition*, 61(2): 109–124.
- Samadi, F., dan Fard, F. R., 2020. Phytochemical properties, antioxidant activity and mineral content (Fe, Zn and Cu) in Iranian produced black tea, green tea and roselle calyces. *Biocatalysis and Agricultural Biotechnology*, 23(2020).
- Sanchez-Rangel, J. C., Benavides, J., Heredia, J. B., Cisneros-Zevallos, L., dan Jacobo-Velazquez, D. A., 2013. The Folin-Ciocalteu assay revisited: improvement of its specificity for total phenolic content determination. *Analytical Methods*, 2013, 5, 5990.
- Satiadarma, K., Mulja, M., Tjahjono, D. H., dan Kartasasmita, R. E. 2004. *Asas Pengembangan Prosedur Analisis*. Surabaya: Airlangga University Press, p. 46–50.

- Sealy, R., 1958. *A Revision of the Genus Camellia*. London: The Royal Horticultural Society.
- Sennayake, S. N., 2013. Green tea extract: Chemistry, antioxidant properties. *Journal of Functional Foods*, Vol. 1 No. 3, p. 1–13.
- Setyamidjaja, D., 2000. *Teh Budidaya dan Pascapanen*. Yogyakarta: Kanisius.
- Shahidi, F., 2015. Antioxidants: principles and applications. Dalam: Shahidi, F, eds. *Handbook of Antioxidant for Food Preservation*. Amsterdam: Woodhead Publishing.
- Sharangi, A. B., 2009. Medicinal and therapeutic potential of tea (*Camellia sinensis* L.) – A review. *Food Research International*, Elsevier Ltd, Vol. 5-6 No. 42, p. 529–535.
- Shekhar, T. C., dan Anju, G., 2014. Antioxidant activity by dpph radical scavenging method of *Ageratum conyzoides* Linn. Leaves. *American Journal of Ethnomedicine*, Vol. 1, No. 4, p. 244–249.
- Shimamura, T., Sumikura, Y., Yamazaki, T., Tada, A., Kashiwagi, T., Ishikawa, H., Matsui, T., Sugimoto, N., Akiyama, H., dan Ukeda, H., 2014. Applicability of the DPPH Assay for Evaluating the Antioxidant Capacity of Food Additives – Inter-laboratory Evaluation Study. *Analytical Sciences*, Volume 30, p. 717–721.
- Singh, P., Khan, M., dan Hailemariam, H., 2017. Nutritional and Health Importance of *Hibiscus Sabdariffa*: A Review and Indication for Research Needs. *Journal of Nutritional Health and Food Engineering*, Vol. 6(5):00212.
- Singh, S., dan Singh, R. P., 2008. In vitro methods of assay of antioxidants: an overview. *Food Review International*, Vol. 24, p. 392–415.
- Skoog, D. A., Holler, F. J., dan Crouch, S. R., 2007. *Principles of Instrumental Analysis Sixth Edition*. Canada: Thompson Corporation, p. 367–390.

- Soewono, S., dan Siti, K., 2016. *Flavonoid*. Surabaya: Airlangga University Press, p. 39–45.
- Song, J.M., Lee, K.H., & Seong, B.L. (2005). Antiviral effect of catechins in green tea on influenza virus. *Antiviral Research*, 68(2), p. 66-74.
- Tahir, H. E., Xiaobo, Z., Mariod, A. A., Mahunu, G. K., Abdualrahman, M. A. Y., dan Tchabo, W., 2017. Assessment of antioxidant properties, instrumental and sensory aroma profile of red and white Karkade/Roselle (*Hibiscus sabdariffa* L.). *Journal of Food Measurement and Characterization*, 11:1559–1568.
- Thiyam, B., dan Ravindra, S. V., 2015. Green Tea – A healthy sip. *IJSS Case*, p. 55–60.
- Wang, J., Cao, X., Jiang, H., Qi, Y., Chin, K. L., dan Yue, Y., 2014. Antioxidant activity of leaf extracts from different *Hibiscus sabdariffa* Accessions and Simultaneous Determination Five Major Antioxidant Compounds by LC-Q-TOF-MS. *Molecules*, 2014, 19, 21226-21238.
- Wierzejska, R., 2014. Tea and Health: A Review of the Current State of Knowledge. *Przegl Epidemiol*, 68:501–506.
- Willcox, J. K., Ash, S. L., dan Catignani, G. L., 2004. Antioxidants and prevention of chronic disease: Review. *Critical Reviews in Food Science and Nutrition*. 44: 275–95.
- Winarsi, H., 2007. *Antioksidan Alami dan Radikal Bebas*. Yogyakarta: Kanisius, p. 11–23.
- Zhao, C., Li, C., Liu, S., dan Yang, L., 2014. The galloyl catechins contributing to main antioxidant capacity of tea made from *Camellia sinensis* in China. *The Scientific World Journal*, 2014, article 863984.