

DAFTAR PUSTAKA

- AL-Oud, S.S., 2003. Heavy Metal Contents in Tea and Herb Leaves. *Pak. J. Biol. Sci.*, Vol. 6 No. 3, pp. 208–212.
- Alam, N. and Bristi, N.J., 2013. Review on in vivo and in vitro methods evaluation of antioxidant activity. *Saudi Pharmaceutical Journal*, Vol. 21 No. 2, pp. 143–152.
- Almeida, T.S., Araújo, M.E.M., Rodriguez, L.G., Júlio, A., Mendes, B.G., Santos, R.M.B., and Simões J.A.M., 2019. Influence of preparation procedures on the phenolic content, antioxidant and antidiabetic activities of green and black teas. *Braz. J. Pharm. Sci.*, Vol. 55.
- Amić, D., Davidović-Amić, D., Bešlo, D., and Trinajstić, N., 2003. Structure-radical scavenging activity relationships of flavonoids. *Croatica Chemica Acta*, Vol. 76 No. 1, pp. 55–61.
- Ananingsih, V.K., Sharma, A., and Zhou, W., 2013. Green tea catechins during food processing and storage : A review on stability and detection. *FRIN*, Vol. 50 No. 2, pp. 469–479.
- AOAC International. 2011. Standard Format and Guidance for AOAC Standard Method Performance Requirement (SMPR) Documents, pp. 9.
- AOAC International. 2013. Guidelines for Dietary Supplements and Botanicals.
- Artanti, A.N., Nikmah, W.R., Setiawan, D.H., and Prihapsara, F., 2016. Perbedaan kadar kafein daun tehe (*Camellia sinensis* (L.) Kuntze) berdasarkan status ketinggian tempat tanam dengan metode HPLC. *Journal of Pharmaceutical Science and Clinical Research*, Vol.1 No.1, pp. 37-44.
- Bahorun, T., Soobratte M.A., Luximon-Ramma, V., and Arouma, O.I., 2006. Free radicals and antioxidants in cardiovascular health and disease. *Internet J med Update*, Vol. 1, pp. 1-17.
- Cabrera, C., Gimenez, R. and López, M.C., 2003. Determination of Tea Components with Antioxidant Activity. *Journal of Agricultural and Food Chemistry*, Vol. 51 No. 15, pp. 4427-4435.
- Cai, Y., Sun, M., Xing, J., Luo, Q., and Corke, H., 2006. Structure – radical scavenging activity relationships of phenolic compounds from traditional Chinese medicinal plants. *Life Science*, Vol. 78, pp. 2872–2888.
- Chan, E.W.C., Soh, E.Y., Tie, P.P., and Law, Y. P., 2011. Antioxidant and antibacterial properties of green , black , and herbal teas of *Camellia sinensis*. *Pharmacognosy*

- Research*, Vol. 3 No. 4, pp. 266–273.
- Chang, M., Lin, Y., Chang Y., Huang, W., Lin, W., Chen, C., Huang, S., and Lin, Y., 2020. Effects of Infusion and Storage on Antioxidant Activity and Total Phenolic Content of Black Tea. *Appl. Sci.*, Vol. 10, pp. 2685.
- Cleverdon, R., Elhalaby, Y., McAlpine, M.D., Gittings, W., and Ward, W.E., 2018. Total polyphenol content and antioxidant capacity of tea bags : comparison of black, green, red rooibos, chamomile and peppermint over different steep times. *Beverages*, Vol. 4 No. 15.
- Departemen Kesehatan Republik Indonesia. 2000. Parameter Standar Umum Ekstrak Tumbuhan Obat. Jakarta: Departemen Kesehatan.
- Dufresne C.J. and Farnworth E.R., 2001. A review of latest research findings on the health promotion properties of tea. *J Nutr Biochem*, Vol.12, pp. 404–12.
- Escribano, M.T., and Santos, C., 2002. Polyphenols Extractions from Foods. In Escribano MT, Santos C (eds.). *Methods in Polyphenol Analysis*. USA: CRC Press.
- Feng, Q., Torii, Y., Uchida, K., Nakamura Y., Hara, Y., and Osawa T., 2002. Black tea polyphenols, theaflavins, prevent cellular DNA damage by inhibiting oxidative stress and suppressing cytochrome P450 1A1 in cell cultures. *Journal of Agricultural and Food Chemistry*, Vol. 50 No. 1, pp. 213–220.
- Fernández-Cáceres, P.L., Martin, M.J., Pablos, F., and González A.G., 2001. Differentiation of tea (*Camellia sinensis*) varieties and their geographical origin according to their metal content. Vol. 49, pp. 4775–4779.
- Fernando, C.D. and Soysa, P., 2015. Extraction kinetics of phytochemicals and antioxidant activity during black tea (*Camellia sinensis L.*) brewing. *Nutrition Journal*. Vol. 14 No. 1, pp. 1–7.
- Friedman, M., 2007. Overview of antibacterial, antitoxin, antiviral, and antifungal activities of tea flavonoids and teas. *Molecular Nutrition & Food Research*, Vol. 51, pp. 116– 134.
- Gandjar, I.G., dan Rohman, A., 2007. *Kimia Farmasi Analisis*. Yogyakarta: Pustaka Pelajar. Hal. 419 - 425.
- Hajiaghaalipour, F., Sanusi, J. and Kanthimathi, M.S., 2016. Temperature and Time of Steeping Affect the Antioxidant Properties of White, Green, and Black Tea Infusions. *Journal of Food Science*, Vol. 81 No. 1, pp. 246–254.
- Halliwell, B., and Gutteridge, J. M., 2015. *Free radicals in biology and medicine*. **Oxford University Press, USA**.

- Handa S. S., Khanuja S.P.S, Longo G and Rakesh D.D., 2008. Extraction technologies for medicinal and aromatic plants. *International Centre for Science and High Technology*, Vol. 2, pp 21-25.
- Harmita, 2004. Petunjuk Pelaksanaan validasi Metode dan Cara Perhitungannya. *Majalah Ilmu Kefarmasian*, hal. 117-135.
- Haslam E., 2003. Thoughts on thearubigins. *Phytochemistry*, Vol. 64, pp. 61–73.
- He, J., Xu, L., Yang, L., and Wang, X., 2018. Epigallocatechin gallate is the most effective catechin against antioxidant stress via hydrogen peroxide and radical scavenging activity. *Med Sci Monit*, Vol. 24, pp. 8189-8206.
- Hilal, Y., and Engelhardt U., 2007. Characterisation of white tea comparison to green and black tea. *J. Verbr. Lebensm.* Vol. 2, pp. 414-421.
- Hong, J., Smith, T.J., Ho, C., August, D.A., and Yang, C.S., 2001. Effects of purified green and black tea polyphenols on cyclooxygenase- and lipoxygenase-dependent metabolism of arachidonic acid in human colon mucosa and colon tumor tissues. *Biochemical Pharmacology*, Vol. 62 No. 9, pp. 1175–1183.
- ICH, 2005. Harmonised Tripartite Guideline: Validation of Analytical Procedures: Text and Methodology, Q2(R1), ICH, Geneva, Switzerland.
- Indarti, Diah., 2015. **Outlook Teh Komoditas Pertanian Subsektor Perkebunan**. Sekretariat Jendral Kementrian Pertanian: Indonesia
- Irianti, T., Puspitasari, A., Machwiyyah, L., and Rabbani, H.R., 2015. Aktivitas penangkapan radikal 2-2' Difenil-1-Pikril Hidrazil (DPPH) ekstrak etanolik daun mengkudu (*Morinda citrifolia* L.), dan batang brotowali (*Tinospora crispa* L.), fraksi air serta fraksi air terhidrolisis. *Traditional Medicine Journal*, Vol. 20, pp. 140-148
- Jaya, I.G.N.I.P., Leliqia, N.P.E., dan Widjaja, I.N.K., 2012. Uji aktivitas penangkapan radikal DPPH ekstrak produk teh hitam (*Camellia Sinensis* (L.) O.K.) dan gambir (*Uncaria Gambir* (Hunter) Roxb) serta profil KLT densitometrinya. *Jurnal Farmasi Udayana*, Vol. 1 No. 1, pp. 86-101.
- Johary, A., Jain, V., and Misra, S., 2012. Role of Lycopene in the prevention of cancer. *International Journal of Nutrition, Pharmacology, Neurological Disease*, Vol. 2 No. 3, pp. 167-170.
- Kelebek, H., 2016. LC-DAD – ESI-MS / MS characterization of phenolic constituents in Turkish black tea : Effect of infusion time and temperature. *Food Chemistry*, Vol. 204, pp. 227–238.

- Kim, Y., Goodner, K.L., Park, J.D., Choi, J., and Talcott, S.T., 2011. Changes in antioxidant phytochemicals and volatile composition of *Camellia sinensis* by oxidation during tea fermentation. *Food Chemistry*, Vol. 129 No. 4, pp. 1331-1342.
- Kim, Y., Welt, B.A., and Talcott, S.T., 2011. The impact of packaging materials on the antioxidant phytochemical stability of aqueous infusions of green tea (*Camellia sinensis*) and yaupon holly (*Ilex vomitoria*) during cold storage. *J. Agric. Food Chem*, Vol. 59, pp. 4676–4683
- Kyle, J.A.M., Morrice, P.C., McNeill, G., and Duthie, G.G., 2007. Effects of infusion time and addition of milk on content and absorption of polyphenols from black tea. *J. Agric. Food Chem*, Vol. 55, pp. 4889-4894.
- Lachman J, Hosnedl V, Pivec V, and Orsak M., 2003. Polyphenol content in green, black and oolong tea (*Camellia sinensis/L./kuntze*) infusions in different times of tea maceration. *Scientia Agriculturae Bohemica*, Vol. 34, pp. 22–28.
- Lantano, C., Rinaldi M., Cavazza, A., Barbanti, D., and Corradini, C., 2015. Effects of alternative steeping methods on composition, antioxidant property and colour of green, black and oolong tea infusions, *J. Food Sci Technol*, Vol. 52 No. 12, pp. 8276-8283.
- Lee, J. and Chambers, D., 2009. Sensory descriptive evaluation: brewing methods affect flavour of green tea. *Asian Journal of Food and Agro-Industry*, Vol. 2 No. 04, pp. 427–439.
- Leung, L. K., Su, Y., Chen, R., Zhang, Z., Huang, Y., and Chen, Z.Y., 2001. Theaflavins in black tea and catechins in green tea are equally effective antioxidants. *The Journal of Nutrition*, Vol. 131 No. 9, pp. 2248–2251.
- Liang, H., Liang Y., Dong, J., Lu, J., Xu, H., and Wang, H., 2007. Decaffeination of fresh green tea leaf (*Camellia sinensis*) by hot water treatment. *Food Chemistry*, Vol. 101 No. 4, pp. 1451–1456.
- Lopez, P., Buffoni, E., Pereira, F., Vilchez, and Quero J.L., 2011. Analytical Method Validation, Wide Spectra of Quality Control, pp. 4-10.
- Luczaj, W. and Skrzydlewska, E., 2005. Antioxidative properties of black tea. *Preventive Medicine*, Vol. 40, pp. 910–918.
- Mahmood, T., Akhtar, N., and Khan B.A., 2010. The morphology, characteristic, and medicinal properties of *Camellia sinensis* Tea. *Journal of Medicinal Research*, Vol. 4 No. 19, pp. 2028-2033.
- Manju, V., Sailaja, J.K. and Nalini, N. 2002. Circulating lipid peroxidation and

- antioxidant status in cervical cancer patients: a case-control study. *Clinical Biochemistry*, Vol. 35, pp. 621–625.
- McAlpine, M. and Ward, W., 2016. Influence of steep time on polyphenol content and antioxidant capacity of black, green, rooibos, and herbal teas. *Beverages*, Vol. 2 No. 3, pp. 17.
- Molyneux, P., 2004. The use of the stable free radical diphenylpicryl-hydrazyl (DPPH) for estimating antioxidant activity. *Songklanakarin Journal of Science and Technology*, Vol. 26 No. 2 pp. 211–219.
- Moon, J.K. and Shibamoto, T., 2009. Antioxidant assays for plant and food components. *Journal of Agricultural and Food Chemistry*, Vol. 57 No. 5, pp. 1655–1666.
- Ngure F.M., Kanyiri W.J., Mahungu S.M., and Shitandi A.A., 2009. Catechins depletion patterns in relation to theaflavin and thearubigins formation. *Food Chemistry*, pp. 115: 8-14.
- Nikniaz, Z., Mahdafi, R., Ghaemmaghami S.J., Yagin, N.L., Nikniaz, L., 2016. Effect of different brewing times on antioxidant activity and polyphenol content of loosely packed and bagged black teas (*Camellia sinensis L.*). *Avicenna J Phytomed*, Vol. 6 No. 3, pp. 313-321.
- O’Neil, M.J., 2006. *The Merck Index: An Encyclopedia of Chemicals, Drugs, and Biologicals*. 14th edition.
- Pastoriza, S., Pérez-Burillo, S. and Rufián-Henares, J.Á., 2017. How brewing parameters affect the healthy profile of tea. *Food Science*, Vol.14, pp. 7–12.
- Pavia D.L., Lampman G.M., Kriz G.S., dan Vyvyan J.R. 2009. Introduction to Spectroscopy; Fourth Edition. Belmont. USA
- Pham-Huy, L.A., He, H., and Pham-Huy, C., 2008. Free radicals, antioxidants in disease and health. *International Journal Biomedicine Science*, Vol. 4 No. 2, pp. 89-96
- Phaniendra, A., Jestadi, D.B., and Periyasamy, L., 2014. Free radicals: properties, sources, targets, and their implication in various diseases. *Indian Journal of Clinical Biochemistry*, Vol. 30 No. 1, pp. 11–26.
- Prior, R. L., Wu, X. and Schaich, K., 2005. Standardized methods for the determination of antioxidant capacity and phenolics in foods and dietary supplements, *Journal of Agricultural and Food Chemistry*, Vol. 53 No. 10, pp. 4290–4302.
- Purwanti, L., Dasuki, U.A. and Imawan, A.R., 2019. Perbandingan aktivitas antioksidan dari seduhan 3 merk teh hitam (*Camellia sinensis (L.) Kuntze*) dengan metode seduhan berdasarkan SNI 01-1902-1995. *Jurnal Ilmiah Farmasi Farmasyifa*, Vol.

- 2 No. 1, pp. 19–25.
- Rohdiana, D., 2001. Aktivitas pengangkapan radikal polifenol dalam daun teh. *Majalah Farmasi Indonesia*, Vol. 1 No. 1, pp. 52–58.
- Saklar, S., Ertas, E., Ozdemir, I.S., and Karadeniz, B., 2015. Effects of different brewing conditions on catechin content and sensory acceptance in Turkish green tea infusions. *Journal of Food Science and Technology*, Vol. 52 No. 10, pp. 6639–6646.
- Saxena, P.N. 2007. Antioxidants and Their Role in Human Live, Agra: Dr. B. R. Ambedkar University. pp. 15-25.
- Sharangi, A. B., 2009. Medicinal and therapeutic potentialities of tea (*Camellia sinensis* L.) – A review. *Food Research International*. Vol. 42 No. 5, pp. 529–535.
- Standar Nasional Indonesia 3836-2013. 2013. Teh Kering Dalam Kemasan. Badan Standarisasi Nasional.
- Standar Nasional Indonesia 01-1902-1995. 1995. Teh Hitam Celup. Badan Standarisasi Nasional.
- Tajero, J., Gayoso, S., Caro, I., Cardoba-Diaz, D., Mateo, J., Basterrechea, J. E., and Jimenez, P., 2014. Comparative analysis of tea antioxidant and free-radical scavenging activities of different water-soluble extracts of green, black, and oolong tea samples. *Food and Nutrition Sciences*, Vol. 5 No. 22, pp. 2157.
- Tariq, M., Naveed, A. and Barkat, A.K., 2010. The morphology, characteristics, and medicinal properties of *Camellia sinensis* tea. *Journal of Medicinal Plants Research*, Vol. 4 No. 19, pp. 2028-2033
- United States Pharmacopeial Convention. 2014. The United States Pharmacopeia 37-National Formulary 32 (USP37-NF32). Rockville USA: United States Pharmacopeial Convention Inc. 1225 pp.1-8
- United States Pharmacopeial Convention. 2018. *The United States Pharmacopeia 41-National Formulary 36 (USP 41 - NF 36)*. Rockville USA : The United States Pharmacopeial Convention Inc.
- Venditti, E. Bacchetti, T., Tiano, L., Carloni, P., Greci, L., and Damiani, E., 2010. Hot vs. cold water steeping of different teas : Do they affect antioxidant activity?. *Food Chemistry*. Vol. 119 No. 4, pp. 1597–1604.

- Wei K., Wang L., Zhou J., He W., Zeng J., Jiang Y., and Cheng H., 2011. Catechin contents in tea (*Camellia sinensis* L.) as affected by cultivar and environment and their relation to chlorophyll contents. *Journal of Food Chemistry*, Vol. 12, pp. 44-48.
- Winarsi, H. 2007. **Antioksidan Alami & Radikal Bebas, Potensi dan Aplikasinya dalam Kesehatan**, Yogyakarta: Penerbit Kanisius, hal. 12.
- Yang, D.J., Hwang, L.S. and Lin, J.T., 2007. Effects of different steeping methods and storage on caffeine, catechins and gallic acid in bag tea infusions, *Journal of Chromatography A.*, Vol. 1156, pp. 312–320.
- Yao, L., 2006. Food Chemistry Compositional analysis of teas from Australian supermarkets. Vol. 94, pp. 115–122.
- Yuwono, M., Indrayanto, G., 2005. Validation of chromatographic methods of analysis. **Profiles of Drug Substances, Excipients, and Related Methodology**, Vol. 32, pp. 243-258.