

DAFTAR PUSTAKA

- Agate, A. D. & Bhat, J. V (1966). Role of pectinolytic yeasts in the degradation of mucilage layer of *Coffea robusta* cherries. *Applied microbiology*, 14(2), 256–60.
- Ahmed, T., Kanwal, R., & Ayub, N. (2006). Influence of Temperature on Growth Pattern of *Lactococcus lactis*, *Streptococcus cremoris* and *Lactobacillus acidophilus* Isolated from Camel Milk. *Biotechnology*, 5(4), 481–488.
- Akiyama, M., Murakami, K., Ikeda, M., Iwatsuki, K., Kokubo, S., Wada, A., Tokuno, K., Onishi, M., Iwabuchi, H., & Tanaka, K. (2005). Characterization of flavor compounds released during grinding of roasted robusta coffee beans. *Food Science and Technology Research*, 11(3), 298–307.
- Amanpour, A. & Selli, S. (2016). Differentiation of Volatile Profiles and Odor Activity Values of Turkish Coffee and French Press Coffee. *Journal of Food Processing and Preservation*, 40(5), 1116–1124.
- Amorim, H. V & Amorim, V. L. (1977). Coffee enzymes and coffee quality, in *Enzymes in Food and Beverage Processing*. Washington DC. American Chemical Society, 259–274.
- Anonim (2015). Acetic Acid. <https://coffeechemistry.com/chemistry/acids/acetic-acid>. Diakses tanggal 4 September 2019.
- Anonim (2016). Kopi Gayo; Goodbye 2016, Welcome 2017. <http://lintasgayo.co/2016/12/22/kopi-gayo-goodbye-2016-welcome-2017>. Diakses tanggal 28 June 2018.
- Anonim (2018). Upah Buruh Sortir Biji Kopi Gayo. <https://antarafoto.com/seni-budaya/v1519213502/upah-buruh-sortir-biji-kopi-gayo>. Diakses tanggal 28 Juni 2018.
- Anonim (2019a). Flavornet. <http://flavornet.org/flavornet.html>. Diakses tanggal 10 Oktober 2019.
- Anonim (2019b). Odor & Flavor Detection Thresholds in Water (In Parts per Billion). <http://leffingwell.com/odorthre.htm>. Diakses tanggal 10 Oktober 2019.
- Anonim (2019c) TGSC Information System. www.thegoodscentcompany.com. Diakses tanggal 10 Oktober 2019.
- Arunga, R. O. (1982). Coffee, in *Fermented Foods*. London, Academic Press, 259–274.
- Arya, M. & Rao, L. J. M. (2010). An Impression of Coffee Carbohydrates An

Impression of Coffee, *Critical Reviews in Food Science and Nutrition*, 47(1), 51–67.

- Ashik, M., Khan, I., Ueno, K., Horimoto, S., & Komai, F. (2009). CIELAB color variables as indicators of compost stability. *Waste Management*. Elsevier Ltd, 29(12), 2969–2975.
- Asther, M., Isabel, M., Alvarado, E., Haon, M., Navarro, D., Lesage-meessen, L., & Record, E. (2005). Purification and characterization of a chlorogenic acid hydrolase from *Aspergillus niger* catalysing the hydrolysis of chlorogenic acid. *Journal of Biotechnology*, 115, 47–56.
- Avallone, S., Brillouet, J.-M., Olguin, E., Guyot, B., Guiraud, J.-P., & Avallone, S. (2001). Microbiological and Biochemical Study of Coffee Fermentation. *Current Microbiology*, 42(4), 252–256.
- Avallone, S., Brillouet, J. M., Guyot, B., Olguin, E., & Guiraud, J. P. (2002). Involvement of pectolytic micro-organisms in coffee fermentation. *International Journal of Food Science and Technology*, 191–198.
- Baggenstoss, J. U. B., Oisson, L. U. P., Aegi, R. U. T. H. K., Erren, R. A. P., & Scher, F. E. E. (2008). Coffee Roasting and Aroma Formation: Application of Different Time-Temperature Conditions, *Journal of Agricultural and Food Chemistry*, 56(14), 5836–5846.
- Balzer, H. . (2001). Acids in coffee, in *Coffee. Recent Developments*. London, Blackwell Science, 18–32.
- Batista, L. R., Chalfoun, S. M., Silva, C. F., Cirillo, M., Varga, E. A., & Schwan, R. F. (2009). Ochratoxin A in coffee beans (*Coffea arabica* L.) processed by dry and wet methods, *Food Control*. Elsevier Ltd, 20(9), 784–790.
- Bennat, C., Engelhardt, U. H., Kiehne, A., Wirries, F. M., & Maier, H. G. (1994). HPLC Analysis of chlorogenic acid lactones in roasted coffee. *Zeitschrift für Lebensmittel-Untersuchung und -Forschung*, 199(1), 17–21.
- Bertrand, B., Vaast, P., Alpizar, E., Etienne, H., Davrieux, F., & Charmetant, P. (2006). Comparison of bean biochemical composition and beverage quality of Arabica hybrids involving Sudanese-Ethiopian origins with traditional varieties at various elevations in Central America. *Tree Physiology*, 26(9), 1239–1248.
- Bertrand, B., Boulanger, R., Dussert, S., Ribeyre, F., Berthiot, L., Descroix, F., & Joët, T. (2012). Climatic factors directly impact the volatile organic compound fingerprint in green Arabica coffee bean as well as coffee beverage quality. *Food Chemistry*. Elsevier Ltd, 135(4), 2575–2583.
- Bhumiratana, N., Adhikari, K., & Iv, E. C. (2011). Evolution of sensory aroma

- attributes from coffee beans to brewed coffee, *LWT - Food Science and Technology*. Elsevier Ltd, 44(10), 2185–2192.
- Blank, I., Sen, A., & Grosch, W. (1992). Potent odorants of the roasted powder and brew of Arabica coffee. *Zeitschrift für Lebensmittel-Untersuchung und -Forschung*, 195(3), 239–245.
- Borém, F. ., Isquierdo, E. ., Fernandes, S. ., & Fernandes, M. (2008). *Armazenamento do café, in Pós-colheita do café*. Lavras, Brazil, Editoria UFLA.
- Bosselmann, A. S., Dons, K., Oberthur, T., Olsen, C. S., Ræbild, A., & Usma, H. (2009). The influence of shade trees on coffee quality in small holder coffee agroforestry systems in Southern Colombia. *Agriculture, Ecosystems and Environment*, 129(1–3), 253–260.
- Bradbury, A. G. (2001). Chemistry I: Non-volatile compounds, in *Coffee: Recent developments*. Oxford, Blackwell Science, 1–17.
- Bressani, P., Paula, A., Juliana, S., Reis, S., Ribeiro, D., & Freitas, R. (2018). Characteristics of fermented coffee inoculated with yeast starter cultures using different inoculation methods. *LWT - Food Science and Technology*. Elsevier, 92(October 2017), 212–219.
- Bruyn, F. De, Zhang, S. J., Pothakos, V., Torres, J., Lambot, C., Moroni, A. V., Callanan, M., Sybesma, W., Weckx, S., & Vuysta, L. De (2017). Exploring the Impacts of Postharvest Processing on the Microbiota and Metabolite Profiles during Green Coffee Bean Production. *Applied and Environmental Microbiology*, 83(1), 1–16.
- Buffo, R. A. & Cardelli-freire, C. (2004). Coffee flavour : an overview. *Flavour and Fragrance Journal*, 19(2), 99–104.
- Caporaso, N., Whitworth, M. B., Cui, C., & Fisk, I. D. (2018). Variability of single bean coffee volatile compounds of Arabica and robusta roasted coffees analysed by SPME-GC-MS. *Food Research International*. Elsevier, 108, 628–640.
- Cappucio, R. (2005). Physiology of perception, in *Espresso coffee: The science of quality*. San Diego, CA, USA, Elsevier, 316–351.
- Casal, S., Oliveira, M. B., & Ferreira, M. A. (2000). HPLC / diode-array applied to the thermal degradation of trigonelline , nicotinic acid and caffeine in coffee, 68, 481–485.
- De Castro, R. D. & Marraccini, P. (2006). Cytology, biochemistry and molecular changes during coffee fruit development. *Brazilian Journal of Plant Physiology*, 18(1), 175–199.

- Cheong, M. W., Hin, K., Jian, J., Ong, M., Quan, S., Curran, P., & Yu, B. (2013). Volatile composition and antioxidant capacity of Arabica coffee. *Food Research International*. Elsevier Ltd, 51(1), 388–396.
- Clarke, R. . & Macrae, R. (1985). *Coffee : Chemistry, in Coffee*. 1st edn. London, Elsevier Applied Science Publishers, 115.
- Clarke, R. & Vitzthum, O. G. (2008) *Coffee: Recent developments*. London, John Wiley and Sons.
- Clifford, M. N. (1985). Chlorogenic acids, in *Coffee*. Netherlands, Springer, 153–202.
- Clifford, M. N. (1999). Chlorogenic acids and other cinnamates - Nature, occurrence and dietary burden. *Journal of the Science of Food and Agriculture*, 79(3), 362–372.
- Costa Freitas, A. M. & Mosca, A. I. (1999). Coffee geographic origin - An aid to coffee differentiation. *Food Research International*, 32(8), 565–573.
- Dadali, G., Demirhan, E., & Özbek, B. (2007). Color change kinetics of spinach undergoing microwave drying. *Drying Technology*, 25(10), 1713–1723.
- Djossou, O., Ouzari, I., Rodriguez-Serrano, G., Boudabous, A., Roussos, S., Lakhall Mirleau, F., Karou, G., Niamke, S., & Perraud-Gaime, I. (2011). Robusta coffee beans post-harvest microflora: *Lactobacillus plantarum* sp. as potential antagonist of *Aspergillus carbonarius*. *Anaerobe*. Elsevier Ltd, 17(6), 267–272.
- Duarte, G., Pereira, A., & Adriana, F. (2010). Chlorogenic acids and other relevant compounds in Brazilian coffees processed by semi-dry and wet post-harvesting methods, *Food Chemistry*. Elsevier Ltd, 118(3), 851–855.
- Dulsat-Serra, N., Quintanilla-Casas, B., & Vichi, S. (2016). Volatile thiols in coffee: A review on their formation, degradation, assessment and influence on coffee sensory quality. *Food Research International*, 89, 982–988.
- Eira, M. T. S., Amaral Da Silva, E. A., De Castro, R. D., Dussert, S., Walters, C., Bewley, J. D., & Hilhorst, H. W. M. (2006). Coffee seed physiology. *Brazilian Journal of Plant Physiology*, 18(1), 149–163.
- Ellyanti, Karim, A., & Basri, H. (2012). Analisis Indikasi Geografis Kopi Arabika Gayo Ditinjau dari Rencana Tata Ruang Wilayah Kabupaten. *Jurnal Agrista*, 16(2), 46–61.
- Evangelista, S. R., Silva, C. F., Miguel, M. G. P. C., Cordeiro, C. S., Pinheiro, A. C. M., Duarte, W. F., & Schwan, R. F. (2014). Improvement of coffee beverage quality by using selected yeasts strains during the fermentation

- in dry process. *Food Research International*. Elsevier Ltd, 61, 183–195.
- Evangelista, S. R., Miguel, M. G. P. C., Cordeiro, C. S., Silva, C. F., Pinheiro, A. C. M., & Schwan, R. F. (2014). Inoculation of starter cultures in a semi-dry coffee (*Coffea arabica*) fermentation process. *Food Microbiology*, 44, 87–95.
- Fadai, Melrose, J., Please, C. P., Schulman, A., & Gorder, R. A. Van (2017). International Journal of Heat and Mass Transfer A heat and mass transfer study of coffee bean roasting. *International Journal of Heat and Mass Transfer*. Elsevier Ltd, 104, 787–799.
- Fadai, N. T., Melrose, J., Please, C. P., Schulman, A., & Van Gorden, R. A. (2017). A heat and mass transfer study of coffee bean roasting. *International Journal of Heat and Mass Transfer*, 104, 787–799.
- Farah, A., Monteiro, M. C., Calado, V., Franca, A. S., & Trugo, L. C. (2006). Correlation between cup quality and chemical attributes of Brazilian coffee, *Food Chemistry*, 98(2), 373–380.
- Farah, A. (2012). Coffee constituents, in *Coffee*. Wiley-Blackwell, 21–58.
- Flament (2001). The Individual Constituent: Structure, nomenclature, origin, chemical and organoleptic properties, in *Coffee Flavor Chemistry*. New York, John Wiley and Sons, 81–335.
- Folmer, B., Blank, I., Farah, A., Giuliano, P., Sanders, D., & Wille, C. (2017) *the Craft of Science of Coffee*. London, Elsevier Ltd.
- Franca, A. S., Mendonca, J. C. F., & Oliveira, S. D. (2005). Composition of green and roasted coffees of different cup qualities. *Lebensmittel-Wissenschaft & Technologie-Food Science and Technology*, 38, 709–715.
- Frank, H. A., Lum, N. A., & Dela Cruz, A. S. (1965). Bacteria responsible for mucilage-layer decomposition in Kona coffee cherries. *Applied Microbiology*, 13, 201–207.
- Ginz, M., Balzer, H. H., Bradbury, A. G. W., & Maier, H. G. (2000). Formation of aliphatic acids by carbohydrate degradation during roasting of coffee. *European Food Research and Technology*, 211(6), 404–410.
- Glassner, D. A., Elankovan, P., Beacom, D. R., & Berglund, K. A. (1995). Purification Process for Succinic Acid Produced by Fermentation, 51(2).
- Gonzalez-Rios, O., Suarez-Quiroz, M. L., Boulanger, R., Barel, M., Guyot, B., Guiraud, J. P., & Schorr-Galindo, S. (2007). Impact of 'ecological' post-harvest processing on coffee aroma: II. Roasted coffee. *Journal of Food Composition and Analysis*, 20(3–4), 297–307.
- Gretsch, C., Sarrazin, C., & Liardon, R. (1999). Evolution of coffee aroma

characteristics during roasting, in Proceedings of the 18th International Scientific Colloquium on Coffee. Helsinki, Finland, ASIC, Paris, France, 27–34.

- Grosch, W. (1998). Flavour of coffee. A review, *Nahrung - Food*, 42(6), 344–350.
- Grosch, W. (2001). Chemistry III: Volatile compounds, in *Coffee: Recent developments*. Oxford, Blackwell Science, 68–89.
- Hameed, A., Hussain, S. A., Ijaz, M. U., Ullah, S., Pasha, I., & Suleria, H. A. R. (2018). Farm to Consumer: Factors Affecting the Organoleptic Characteristics of Coffee. II: Postharvest Processing Factors. *Comprehensive Reviews in Food Science and Food Safety*, 17(5), 1184–1237.
- Herrera, J. C., Combes, M. C., Cortina, H., Alvarado, G., & Lashermes, P. (2002). Gene introgression into *Coffea arabica* by way of triploid hybrids (*C. arabica* x *C. canephora*). *Heredity*, 89(6), 488–494.
- Higdon, J. V. & Frei, B. (2006). Coffee and Health: A Review of Recent Human Research. *Critical Reviews in Food Science and Nutrition*, 46(2), 101–123.
- Hofmann, T. & Hufnagel, J. C. (2008). Quantitative Reconstruction of the Nonvolatile Sensometabolome of a Red Wine. *Journal of Agricultural and Food Chemistry*, 56, 9190–9199.
- Holscher, W. & Steinhart, H. (1992). Investigation of roasted coffee freshness with an improved headspace technique. *Zeitschrift für Lebensmittel-Untersuchung und-Forschung*, 195(1), 33–38.
- Hulupi, R., Nugroho, D., & Yusianto (2013). Keragaan Beberapa Varietas Lokal Kopi Arabika di Dataran Tinggi Gayo. *Pelita Perkebunan*, 29(2), 69–81.
- Illy, A. & Viani, R. (1995). Espresso Coffee: The Chemistry of Quality, in London / San Diego, Academic Press, 253.
- Ismayadi, C., Marsh, A., & Clarke, R. (2005). Influence of Storage of Wet Arabica Parchment Prior to Wet Hulling on Moulds Development, *Ochratoxin A* Contamination, and Cup Quality of Mandheling Coffee. *Pelita Perkebunan (a Coffee and Cocoa Research Journal)*, 21(2), 131–146.
- Joët, T., Laffargue, A., Descroix, F., Doulebeau, S., Bertrand, B., De, A., & Dussert, S. (2010). Influence of environmental factors, wet processing and their interactions on the biochemical composition of green Arabica coffee beans. *Food Chemistry*. Elsevier Ltd, 118(3), 693–701.
- Karo, H. S. A. B. (2009). Hosanna Sri Arta Br Karo : Analisis Usahatani Kopi Di Kecamatan Simpang Empat Kabupaten Karo, 2010. Universitas

Sumatera Utara.

- Kaufmann, H. P. & Gupta, A. K. S. (1964). Über die lipide der kaffeebohne V: die triterpene und kohlenwasserstoffe,. *Fette Seifen Anstrichm*, 66, 461–466.
- Kaufmann, H. P. & Hamsagar, R. S. (1962). Zur kenntnis der lipide der kaffeebohne I: Über fettsäure-ester des cafestols,. *Fette Seifen Anstrichm*, 64, 206–213.
- Kennes, C., Veiga, M. C., Dubourguier, H. C., Touzel, J. P., Albagnac, G., Naveau, H., & Nyns, E. J. (1991). Trophic relationships between *Saccharomyces cerevisiae* and *Lactobacillus plantarum* and their metabolism of glucose and citrate. *Applied and Environmental Microbiology*, 57, 1046–1051.
- Kleinwächter, M. & Selmar, D. (2010). Influence of drying on the content of sugars in wet processed green Arabica coffees. *Food Chemistry*. Elsevier Ltd, 119(2), 500–504.
- Knopp, S., Bytof, G., & Selmar, D. (2006). Influence of processing on the content of sugars in green Arabica coffee beans. *European Food Research and Technology*, 223, 195–201.
- Kulapichitr, F., Borompichaichartkul, C., Suppavorasatit, I., & Cadwallader, K. R. (2019). Impact of drying process on chemical composition and key aroma components of Arabica coffee. *Food Chemistry*. Elsevier, 291, 49–58.
- Lean, M. E. & Crozier, A. (2012). Coffee, caffeine and health: What's in your cup?. *Maturitas*, 171–172.
- Lee, K.-G. & Shibamoto, T. (2002) .Analysis of volatile components isolated from Hawaiian green coffee beans (*Coffea arabica* L.). *Food and Fragrance Journal*, 17, 349–351.
- Lee, L. W., Cheong, M. W., Curran, P., Yu, B., & Liu, S. Q. (2015) .Coffee fermentation and flavor--An intricate and delicate relationship. *Food chemistry*. Elsevier Ltd, 185, 182–91.
- Lee, L. W., Cheong, M. W., Curran, P., Yu, B., & Liu, S. Q. (2016) .Modulation of coffee aroma via the fermentation of green coffee beans with *Rhizopus oligosporus*: I. Green coffee. *Food Chemistry*. Elsevier Ltd, 211, 916–924.
- Lee, L. W., Yu, G., Wai, M., Curran, P., & Yu, B. (2017) .Modulation of the volatile and non-volatile profiles of coffee fermented with *Yarrowia lipolytica* : I . Green coffee. *LWT - Food Science and Technology*. Elsevier Ltd, 77, 225–232.

- Leong, K., Yanagida, F., Pan, S., Chen, J., Chen, Y., Chang, Y., & Wu, H. (2014). Diversity of Lactic Acid Bacteria Associated with Fresh Coffee Cherries in Taiwan, *Current Microbiology*, 68(4), 440–447.
- Leroy, T., Ribeyre, F., Bertrand, B., Charmetant, P., Dufour, M., Montagnon, C., Marraccini, P., & Pot, D. (2006). Genetics of coffee quality, Brazilian *Journal of Plant Physiology*, 18(1), 229–242.
- Liu, Y. & Kitts, D. D. (2011). Confirmation that the Maillard reaction is the principle contributor to the antioxidant capacity of coffee brews, *Food Research International*. Elsevier Ltd, 44(8), 2418–2424.
- Lopez, C., Bautista, E., Moreno, E., & Dentan, E. (1989). Factors related to the formation of ‘overfermented coffee beans’ during the wet processing method and storage of coffee, in *Proceedings of 13th ASIC*. Paipa, Colombia, 373–384.
- Maier, H. G. (2005). Chapter 4. Roasting, 4.3 Changes produced by roasting, in *Espresso coffee: The science of quality*. London: UK: Elsevier Academic Press, 191–197.
- Malta, M. . & Chagas, S. J. d. R. (2009). Colheita, preparo e secagem do café, in *Café Arábica- do plantio a colheita*. Belo Horizonte: EPAMIG.
- Martinez, J., Paula, A., Bressani, P., Gabriela, M., Miguel, P., Ribeiro, D., & Freitas, R. (2017). Different inoculation methods for semi-dry processed coffee using yeasts as starter cultures. *Food Research International*. 102, 333–340.
- Masoud, W. & Jespersen, L. (2006). Pectin degrading enzymes in yeasts involved in fermentation of *Coffea arabica* in East Africa. *International Journal of Food Microbiology*, 110(3), 291–296.
- Masoud, W. & Kalsoft, C. H. (2006). The effects of yeasts involved in the fermentation of *Coffea arabica* in East Africa on growth and ochratoxin A (OTA) production by *Aspergillus ochraceus*. *International Journal of Food Microbiology*, 106(2), 229–234.
- Masoud, W., Poll, L., & Jakobsen, M. (2005). Influence of volatile compounds produced by yeasts predominant during processing of *Coffea arabica* in East Africa on growth and *Ochratoxin A* (OTA) production by *Aspergillus ochraceus*. *Yeast*, 22(14), 1133–1142.
- Massawe, G. A. & Lifa, S. J. (2010). Yeasts and lactic acid bacteria coffee fermentation starter cultures. *International Journal of Postharvest Technology and Innovation*, 2(1), 41–82.
- Mazzafera, P. & Padilha, R. P. (2004). Post harvest processing methods and alterations in coffee fruit, in *Proceedings of 20th Colloque Coffee*. India.

- Moon, J. K. & Shibamoto, T. (2010). Formation of volatile chemicals from thermal degradation of less volatile coffee components: Quinic acid, caffeic acid, and chlorogenic acid. *Journal of Agricultural and Food Chemistry*, 58(9), 5465–5470.
- Najiyati, S. & Danarti (2012) *Kopi, Budidaya dan Penanganan Lepas Panen*. Jakarta, PT Penebar Swadaya. Available at: books.google.co.id/books/about/Kopi.html?id=xnwwYAAACAAJ&red_esc=y.
- Neta, E. R. D. C., Johanningsmeier, S. D., & Mcfeeters, R. F. (2007). The Chemistry and Physiology of Sour Taste — A Review. *Journal of Food Science*, 72(2), 33–38.
- Oestreich-Janzen, S. (2010). Chemistry of coffee, in *Comprehensive natural products II*. Oxford, Elsevier Ltd, 1085–1117.
- Ogawa, M. (2014) *Coffee and hippuric acid*. Academic Press.
- Pereira, G. V. D. M., Neto, D. P. D. C., Júnior, A. I. M., Vásquez, Z. S., Medeiros, A. B. P., Vandenberghe, L. P. S., & Soccol, C. R. (2019). Exploring the impacts of postharvest processing on the aroma formation of coffee beans – A review. *Food Chemistry*. Elsevier, 272, 441–452.
- Pereira, G. V. de M., Soccol, V. T., Gollo, A. L., Pandey, A., Soccol, C. R., Medeiros, A. B. P., & Lara, J. M. R. A. (2014). Isolation, selection and evaluation of yeasts for use in fermentation of coffee beans by the wet process. *International Journal of Food Microbiology*. Elsevier B.V., 188, 60–66.
- Pereira, G. V. de M., de Carvalho Neto, D. P., Medeiros, A. B. P., Soccol, V. T., Neto, E., Woiciechowski, A. L., & Soccol, C. R. (2016). Potential of lactic acid bacteria to improve the fermentation and quality of coffee during on-farm processing. *International Journal of Food Science and Technology*, 51(7), 1689–1695.
- Pereira, G. V. de M., Soccol, V. T., Brar, S. K., Neto, E., & Soccol, C. R. (2017). Microbial ecology and starter culture technology in coffee processing. *Critical Reviews in Food Science and Nutrition*. Taylor & Francis, 57(13), 2775–2788.
- Pereira, G. V. M., Miguel, M. G. C., Ramos, C., & Schwan, R. (2012). Microbiological and Physicochemical Starter Culture Bacterial Strains To Develop a Defined Fermentations and Screening of Yeast and Characterization of Small-Scale Cocoa. *Applied Environmental Microbiology*, 78, 5395–5405.
- Pereira, G. V. M., Magalhães, K. T., Almeida, E. G., Coelho, I. S., & Schwan, R. F. (2013). Spontaneous cocoa bean fermentation carried out in a novel-

design stainless steel tank: Influence on the dynamics of microbial populations and physical–chemical properties. *International Journal of Food Microbiology*. Elsevier B.V., 161(2), 121–133.

- Pereira, G. V. M., Neto, E., Soccol, V. T., Medeiros, A. B. P., Woiciechowski, A. L., & Soccol, C. R. (2015). Conducting starter culture-controlled fermentations of coffee beans during on-farm wet processing: Growth, metabolic analyses and sensorial effects. *Food Research International*. Elsevier Ltd, 75, 348–356.
- Poisson, L., Auzanneau, N., Mestdagh, F., Blank, I., & Davidek, T. (2017). New insight into the role of sucrose in the generation of α -diketones upon coffee roasting. *Journal of Agricultural and Food Chemistry*, 66, 2422–2431.
- Puerta Quintero, G. (2005). Quality and safety of coffee processed by the wet method and dried in solar dryers, in *Workshop Improvement of Coffee Quality Through Prevention of Mould Growth 1*. Salvador, Brasil.
- Reineccius, G. (1995). The Maillard reaction and coffee flavor, in *The the 16th ASIC Colloquium Kyoto*. Kyoto.
- Reineccius, G. & Henry, B. (2006) *Flavor Chemistry and Technology*. New York, Taylor & Francis.
- Ribeiro, J. S., Augusto, F., Salva, T. J. G., Thomaziello, R. A., & Ferreira, M. M. C. (2009). Prediction of sensory properties of Brazilian Arabica roasted coffees by headspace solid phase microextraction-gas chromatography and partial least squares. *Analytica Chimica Acta Journal*, 634(2), 172–179.
- Ribeiro, L. S., Miguel, M. G. da C. P., Evangelista, S. R., Martins, P. M. M., Mullem, J. van, Belizario, M. H., & Schwan, R. F. (2017). Behavior of yeast inoculated during semi-dry coffee fermentation and the effect on chemical and sensorial properties of the final beverage. *Food Research International*. Elsevier Ltd, 92, 26–32.
- Romano, P., Fiore, C., Paraggio, M., Caruso, M., & Capece, A. (2003). Function of yeast species and strains in wine flavour. *International Journal of Food Microbiology*, 86, 169–180.
- Rotzoll, N., Dunkel, A., & Hofmann, T. (2006). Quantitative Studies, Taste Reconstitution, and Omission Experiments on the Key Taste Compounds in Morel Mushrooms (*Morchella deliciosa* Fr.). *Journal of Agricultural and Food Chemistry*, 54, 2705–2711.
- Savonitti, O. (2005). Chapter 6. Storage and packaging, 6.1.3 Other physico-chemical changes, in *Espresso Coffee: The science of quality*. London, UK, Elsevier Academic Press, 241–245.

- SCA (2013). *Specialty Coffee Association*. Available at: <https://sca.coffee/> (Accessed: 29 August 2019).
- Schwan, R. .,Pereira, G. V. M.,& Fleet, G. (2014a). Botany and Production of Coffee, in *Cocoa and Coffee Fermentations*. London, Elsevier Ltd, 344–346.
- Schwan, R. .,Pereira, G. V. M.,& Fleet, G. (2014b). Microbial activities during cocoa fermentation, in *Cocoa and Coffee Fermentations*. Boca Raton, FL, CRC Press, 130–184.
- Schwan, R. .,Pereira, G. V. M.,& Fleet, G. . (2014c). Microbial Activity during Coffffee Fermentation, in *Cocoa and Coffee Fermentations*. London, Elsevier Ltd, 401.
- Schwan, R. .,Silvav Ferreira, C.,& Batista, L. R. (2012). Coffee fermentation. In: *Handbook of Plant-Based Fermented Food and Beverage Technology*, in. Boca Raton, FL, CRC Press, 677–690.
- Selmar, D.,Bytof, G.,& SE Knopp (2002). New aspects of coffee processing: the relation between seed germination and coffee quality, in *Dixneuvième Colloque Scientifique International sur le Café*. Paris, ASIC.
- Selmar, D.,Kleinwächter, M.,& Bytof, G. (2015). Metabolic responses of coffee beans during processing and their impact on coffee flavor, in *Cocoa and Coffee Fermentations*. New York, CRC Press, 431–476.
- Sesta, G. (2006). Determination of sugars in royal jelly by HPLC. *Apidologie*, 37(1), 84–90.
- Shibamoto, T. (1983). Heterocyclic compounds in browning and browning/nitrite model systems: Occurrence, formation mechanisms, flavor characteristics and mutagenic activity, in *Instrumental Analysis of Foods*, Vol. I. New York, Academic Press, 229–278.
- Shimizu, M. M. & Mazzafera, P. (2000). A Role for Trigonelline During Imbibition and Germination of Coffee Seeds. *Plant Biology*, 2, 605–611.
- Silva, C. F.,Schwan, R. F.,Dias, S.,& Wheals, A. E. (2000). Microbial diversity during maturation and natural processing of coffee cherries of *Coffea arabica* in Brazil. *International Journal of Food Microbiology*, 60, 251–260.
- Silva, C. F.,Batista, L. R.,Abreu, L. M.,Dias, E. S.,& Schwan, R. F. (2008). Succession of bacterial and fungal communities during natural coffee (*Coffea arabica*) fermentation. *Food Microbiology*, 25(8), 951–957.
- Silva, C. F.,Duarte, W. F.,Vilela, D. M.,Dias, D. R.,Schwan, R. F.,& de Souza Cordeiro, C. (2013). Evaluation of a potential starter culture for enhance

- quality of coffee fermentation. *World Journal of Microbiology and Biotechnology*, 29(2), 235–247.
- Silva, C. F. (2014). Microbial activity during coffee fermentation. In: *Cocoa and Coffee Fermentations*, in *Microbial activity during coffee fermentation*. Boca Raton, FL: CRC Press, 368–423.
- Silva, E. . A. Da, Toorop, P. E., Lammeren, A. A. M. Van, & Hilhorst, H. W. M. (2008). ABA Inhibits Embryo Cell Expansion and Early Cell Division Events During Coffee (*Coffea arabica* ‘Rubi’) Seed Germination. *Annals of Botany*, 102, 425–433.
- Simkin, A. J., Kuntz, M., Moreau, H., & McCarthy, J. (2010). Plant Physiology and Biochemistry Carotenoid profiling and the expression of carotenoid biosynthetic genes in developing coffee grain. *Plant Physiology and Biochemistry*. Elsevier Masson SAS, 48(6), 434–442.
- Sivetz, M. (1963) *Coffee processing technology*. Westport, Connecticut, AVIC.
- Somporn, C., Kamtuo, A., Theerakulpisut, P., & Siriamornpun, S. (2011). Effects of roasting degree on radical scavenging activity, phenolics and volatile compounds of Arabica coffee beans (*Coffea arabica* L. cv. *Catimor*). *International Journal of Food Science and Technology*, 46, 2287–2296.
- Spadone, J. ., Takeoka, G., & Liardon, R. (1990). Analytical investigation of Rio off-flavor in green coffee. *Journal of Agricultural and Food Chemistry*, 38(1), 226–233.
- Stegen, G. v. d & Duijn, J. v (1987). Analysis of normal organic acids in coffee, in *The 12 th International Scientific Colloquium on Coffee*, 3–7.
- Sua´rez-Quiroz, M., Gonza´lez-Rios, O., Barel, M., Guyot, B., Schorr-Galindo, S., & Guiraud, J.-P. (2004). Study of *ochratoxin A*-producing strains in coffee processing. *International Journal of Food Science and Technology*, 39, 501–507.
- Sunarharum, W., Williams, D. J., & Smyth, H. E. (2014). Complexity of coffee flavor: A compositional and sensory perspective. *Food Research International*, 62, 315–325.
- Tadesse, F. T., Jemal, Y., & Abebe, H. (2015). Effect of Green Coffee Processing Methods and Roasting Temperatures on Physical and Cup Quality of Sidama Coffee, Southern Ethiopia. *Journal of Nutritional Ecology and Food Research*, 3(1), 44–50.
- Tang, H., Ma, J.-K., Chen, L., Jiang, L.-W., Xie, J., Li, P., & He, J. (2018). GC-MS Characterization of Volatile Flavor Compounds in Stinky Tofu Brine by Optimization of Headspace Solid-Phase Microextraction Conditions. *Molecules*, 23(3155), 1–14.

- Taniwaki, M. H., Pitt, J. I., Teixeira, A. A., & Iamanaka, B. T. (2003). The source of ochratoxin A in Brazilian coffee and its formation in relation to processing methods. *International Journal of Food Microbiology*, 82, 173–179.
- Taylor, A. J. & Roozen, J. P. (1996). Volatile flavor release from foods during eating. *Critical Reviews in Food Science and Nutrition*, 36(8), 765–784.
- Teixeira, A. A., Brando, C. H. J., Thomaziello, R. A., & Teixeira, R. (1995). Espresso Coffee: The Science of Quality, in. Rome, Elsevier Ltd, 91–95.
- Toci, A. T. & Farah, A. (2014). Volatile fingerprint of Brazilian defective coffee seeds: Corroboration of potential marker compounds and identification of new low quality indicators,. *Food Chemistry*. Elsevier Ltd, 153, 298–314.
- Toledo, P. R. A. B., Pezza, L., Pezza, H. R., & Toci, A. T. (2016). Relationship Between the Different Aspects Related to Coffee Quality and Their Volatile Compounds. *Comprehensive Reviews in Food Science and Food Safety*, 15(4), 705–719.
- Tressl, R. (1980). Formation of aroma compounds by the Maillard reaction, in *The 9th International Scientific Colloquium on Coffee*, 55–76.
- Trugo, L. C. & Macrae, R. (1984) .Chlorogenic Acid Composition of Instant Coffees. *Analyst*, 109, 263–266.
- Trugo & Macrae, R. (1984) .A Study of the Effect of Roasting on the Chlorogenic Acid Composition of Coffee Using HPLC. *Food Chemistry*, 15, 219–227.
- Ugliano, M. & Henschke, P. (2009). Yeasts and wine flavor, in *Wine Chemistry and Biochemistry*. New York, Springer Science, 313–391.
- Urgert, R., van der Weg, G., Kosmeijer-Schuil, T. G., van de Bovenkamp, P., Hovenier, R., & Katan, M. B. (1995). Levels of the Cholesterol-Elevating Diterpenes Cafestol and Kahweol in Various Coffee Brews. *Journal of Agricultural and Food Chemistry*, 43(8), 2167–2172.
- Variyar, P. S., Ahmad, R., Bhat, R., Niyas, Z., & Sharma, A. (2003). Flavoring Components of Raw Monsooned Arabica Coffee and Their Changes during Radiation Processing. *Journal of Agricultural and Food Chemistry*, 51(27), 7945–7950.
- Velmourougane, K. (2013). Impact of natural fermentation on physicochemical, microbiological and cup quality characteristics of Arabica and Robusta coffee. *Proceedings of the National Academy of Sciences India Section B - Biological Sciences*, 83(2), 233–239.
- Viani, R. & Petracco, M. (2007). Coffee, in *Ullmann's Encyclopedia of Industrial*

Chemistry. Wiley- VCH Verlag GmbH & Co, 1–32.

- Vilela, D. M., Pereira, G. V. de M., Silva, C. F., Batista, L. R., & Schwan, R. F. (2010). Molecular ecology and polyphasic characterization of the microbiota associated with semi-dry processed coffee (*Coffea arabica* L.). *Food Microbiology*. Elsevier Ltd, 27(8), 1128–1135.
- Vitzthum, O. G. (1976). *Chemie und bearbeitung des kaffees*, in *Kaffee und Coffein*. Berlin, Springer, 3–64.
- Vitzthum, O. G., Weissmann, C., Becker, R., & Kohler, H. S. (1990). Identification of an aroma key compound in Robusta coffees, in *Cafe Cacao Tea*, 27–36.
- Van der Vossen, H. A. M. (2009). The Cup Quality of Disease-Resistant Cultivars of Arabica Coffee (*Coffea arabica*). *Experimental Agriculture*, 45(3), 323–332.
- Vuyst, L. De, Lefeber, T., Papalexandratou, Z., & Camu, N. (2010). The Functional Role of Lactic Acid Bacteria in Cocoa Bean Fermentation, in *Biotechnology of Lactic Acid Bacteria, Novel Applications*. Blackwell Publishing, 301–325.
- Wahyudi T. (2008). Sambutan Direktur Puslitkoka Indonesia pada buku Panduan budidaya dan pengolahan kopi arabika Gayo, Pusat Penelitian Kopi dan Kakao Indonesia. BAPPEDA NAD dan UNDP.
- Wang, C., Sun, J., Lassabliere, B., Yu, B., Zhao, Feifei, Zhao, Fangju, Chen, Y., & Liu, S. Q. (2019). Potential of lactic acid bacteria to modulate coffee volatiles and effect of glucose supplementation: fermentation of green coffee beans and impact of coffee roasting. *Journal of the Science of Food and Agriculture*, 99(1), 409–420.
- Wasserman, G. (1992). *Coffee*, *Encyclopedia Of Chemical Technology*. John Wiley & Sons, Inc.
- Yeretzian, C., Jordan, A., Badoud, R., & Lindinger, W. (2002). From the green bean to the cup of coffee: Investigating coffee roasting by on-line monitoring of volatiles. *European Food Research and Technology*, 214(2), 92–104.
- Yusianto, Hulupi, R., Mawardi, S., & Ismayadi, C. (2005). Sifat Fisiko-Kimia dan Cita Rasa Beberapa Varietas Kopi Arabika. *Pelita Perkebunan*, 1(3), 200–222.
- Yusianto, Hulupi, R., Mawardi, S., & dan Ismayadi, C. (2007). Mutu Fisik dan Cita Rasa Beberapa Varietas Kopi Arabika Harapan pada Beberapa Periode Penyimpanan. *Pelita Perkebunan*, 3(90), 205–230.
- Zheng, X. & Ashihara, H. (2004). Distribution, biosynthesis and function of

purine and pyridine alkaloids in *Coffea arabica* seedlings. *Plant Science*, 166, 807–813.