DAFTAR PUSTAKA

Abrahão, F. R., Rocha, L. C. R., Santos, T. A., Carmo, E. L. do, Pereira, L. A. S., Borges, S. V., Pereira, R. G. F. A., & Botrel, D. A. (2019). Microencapsulation of bioactive compounds from espresso spent coffee by spray drying. *LWT*, *103*, 116–124. https://doi.org/10.1016/j.lwt.2018.12.061

Aguiar, J., Estevinho, B. N., & Santos, L. (2016). Microencapsulation of natural antioxidants for food application-The specific case of coffee antioxidants-A review. *Trends in Food Science & Technology*, *58*, 21–39. https://doi.org/10.1016/j.tifs.2016.10.012

Al Shannaq, R., & Farid, M. M. (2015). Microencapsulation of phase change materials (PCMs) for thermal energy storage systems. In L. F. Cabeza (Ed.), *Advances in Thermal Energy Storage Systems* (pp. 247–284). Woodhead Publishing.http://www.sciencedirect.com/science/article/pii/B9781782420880500109

Almiahsari, A., Danimayostu, A. A., & Permatasari, D. (2019). *Pengaruh rasio kitosan dan atenolol terhadap diameter ukuran, efisiensi penjerapan dan profil pelepasan pada formula mikrosfer atenolol dengan metode emulsifikasi*. *4*(1), 1–9.

Altemimi, A., Lakhssassi, N., Baharlouei, A., Watson, D. G., & Lightfoot, D. A. (2017). Phytochemicals: Extraction, Isolation, and Identification of Bioactive Compounds from Plant Extracts. *Plants*, *6*(4), 42. https://doi.org/10.3390/plants6040042

Arpagaus, C., John, P., Collenberg, A., & Rütti, D. (2017). Nanocapsules formation by nano spray drying. In *Nanoencapsulation Technologies for the Food and Nutraceutical Industries* (pp. 346–401). Elsevier. https://doi.org/10.1016/B978-0-12-809436-5.00010-0

Ballesteros, L. F., Ramirez, M. J., Orrego, C. E., Teixeira, J. A., & Mussatto, S. I. (2017). Encapsulation of antioxidant phenolic compounds extracted from spent coffee grounds by freeze-drying and spray-drying using different coating materials. *Food Chemistry*, *237*, 623–631. https://doi.org/10.1016/j.foodchem.2017.05.142

Bastías-Montes, J. M., Choque-Chávez, M. C., Alarcón-Enos, J., Quevedo-León, R., Muñoz-Fariña, O., & Vidal-San-Martín, C. (2019). Effect of spray drying at 150, 160, and 170 °C on the physical and chemical properties of maqui extract (Aristotelia chilensis (Molina) Stuntz). *Chilean Journal of Agricultural Research*, *79*(1), 144–152. https://doi.org/10.4067/S0718-58392019000100144

Batista, L. R., Chalfoun de Souza, S. M., Silva e Batista, C. F., & Schwan, R. F. (2016). Coffee: Types and Production. In B. Caballero, P. M. Finglas, & F. Toldrá (Eds.), *Encyclopedia of Food and Health* (pp. 244–251). Academic Press. http://www.sciencedirect.com/science/article/pii/B9780123849472001847

Bazaria, B., & Kumar, P. (2016). Effect of whey protein concentrate as drying aid and drying parameters on physicochemical and functional properties of spray dried beetroot juice concentrate. *Food Bioscience*, *14*, 21–27. Scopus. https://doi.org/10.1016/j.fbio.2015.11.002

Belviso, S., & Barbosa-Pereira, L. (2019). Coffee Supplements. In *Nonvitamin and Nonmineral Nutritional Supplements* (pp. 177–185). Elsevier. https://doi.org/10.1016/B978-0-12-812491-8.00025-4

BUCHI. (2017). *Microencapsulation of Flavors and Fragrances by Spray Drying*. https://static1.buchi.com/sites/default/files/AN_248_2017_flavor_and_fragrance.pdf

Budryn, G., Pałecz, B., Rachwał-Rosiak, D., Oracz, J., Zaczyńska, D., Belica, S., Navarro-González, I., Meseguer, J. M. V., & Pérez-Sánchez, H. (2015). Effect of inclusion of hydroxycinnamic and chlorogenic acids from green coffee bean in β-cyclodextrin on their interactions with whey, egg white and soy protein isolates. *Food Chemistry*, *168*, 276–287. https://doi.org/10.1016/j.foodchem.2014.07.056

Calva-Estrada, S. J., Mendoza, M. R., García, O., Jiménez-Fernández, V. M., & Jiménez, M. (2018). Microencapsulation of vanilla (Vanilla planifolia Andrews) and powder characterization. *Powder Technology*, *323*, 416–423. https://doi.org/10.1016/j.powtec.2017.10.035

Cardello, A. V., & Jaeger, S. R. (2010). 7 - Hedonic measurement for product development: New methods for direct and indirect scaling. In S. R. Jaeger & H. MacFie (Eds.), *Consumer-Driven Innovation in Food and Personal Care Products* (pp. 135–174). Woodhead Publishing. https://doi.org/10.1533/9781845699970.2.135

Chopde, S., Datir, R., Deshmukh, G., Dhotre, A., & Patil, M. (2020). Nanoparticle formation by nanospray drying & its application in nanoencapsulation of food bioactive ingredients. *Journal of Agriculture and Food Research*, *2*, 100085. https://doi.org/10.1016/j.jafr.2020.100085

Cid, M. C., & de Peña, M.-P. (2016). Coffee: Analysis and Composition. In B. Caballero, P. M. Finglas, & F. Toldrá (Eds.), *Encyclopedia of Food and Health* (pp. 225–231). Academic Press. http://www.sciencedirect.com/science/article/pii/B9780123849472001859

de Melo Pereira, G. V., de Carvalho Neto, D. P., Magalhães Júnior, A. I., do Prado, F. G., Pagnoncelli, M. G. B., Karp, S. G., & Soccol, C. R. (2020). Chemical composition and health properties of coffee and coffee by-products. In *Advances in Food and Nutrition Research* (Vol. 91, pp. 65–96). Elsevier. https://doi.org/10.1016/bs.afnr.2019.10.002

Desai, N. M., Gilbert Stanley, J., & Murthy, P. S. (2020). Green coffee nanoparticles: Optimisation, in vitro bioactivity and bio-release property. *Journal of Microencapsulation*, *37*(1), 52–64. https://doi.org/10.1080/02652048.2019.1692946

Desai, N. M., Haware, D. J., Basavaraj, K., & Murthy, P. S. (2019). Microencapsulation of antioxidant phenolic compounds from green coffee. *Preparative Biochemistry and Biotechnology*, *49*(4), 400–406. https://doi.org/10.1080/10826068.2019.1575858

Díaz-Bandera, D., Villanueva-Carvajal, A., Dublán-García, O., Quintero-Salazar, B., & Dominguez-Lopez, A. (2015). Assessing release kinetics and dissolution of spray-dried Roselle (Hibiscus sabdariffa L.) extract encapsulated with different carrier agents. *LWT - Food Science and Technology*, *64*(2), 693–698. https://doi.org/10.1016/j.lwt.2015.06.047

Fang, Z., & Bhandari, B. (2012). Encapsulation Techniques for Food Ingredient Systems. In B. Bhandari & Y. H. Roos (Eds.), *Food Materials Science and Engineering* (pp. 320–348). Wiley-Blackwell. http://onlinelibrary.wiley.com/doi/10.1002/9781118373903.ch12/summary

Fikry, M., Yusof, Y. A., M. Al-Awaadh, A., Abdul Rahman, R., Chin, N. L., & Ghazali, H. M. (2019). Antioxidative and quality properties of full-fat date seeds brew as influenced by the roasting conditions. *Antioxidants*, *8*(7). https://doi.org/10.3390/antiox8070226

Frascareli, E. C., Silva, V. M., Tonon, R. V., & Hubinger, M. D. (2012). Effect of process conditions on the microencapsulation of coffee oil by spray drying. *Food and Bioproducts Processing*, *90*(3), 413–424. https://doi.org/10.1016/j.fbp.2011.12.002

Garg, S. K. (2016). Green Coffee Bean. In *Nutraceuticals* (pp. 653–667). Elsevier. https://doi.org/10.1016/B978-0-12-802147-7.00047-4

Gibson, M., & Newsham, P. (2018). Tea and Coffee. In *Food Science and the Culinary Arts* (pp. 353–372). Elsevier. https://doi.org/10.1016/B978-0-12-811816-0.00018-X

Gilbert Stanley, J. (2020). Green coffee nanoparticles: Optimisation, in vitro bioactivity and bio-release property. *Journal of Microencapsulation*, *37*(1), 52–64. https://doi.org/10.1080/02652048.2019.1692946

Gonçalves, B., Moeenfard, M., Rocha, F., Alves, A., Estevinho, B. N., & Santos, L. (2017). Microencapsulation of a Natural Antioxidant from Coffee-Chlorogenic Acid (3-Caffeoylquinic Acid). *Food and Bioprocess Technology*, *10*(8), 1521–1530. https://doi.org/10.1007/s11947-017-1919-y

Gu, B., Linehan, B., & Tseng, Y.-C. (2015). Optimization of the Büchi B-90 spray drying process using central composite design for preparation of solid dispersions. *International Journal of Pharmaceutics*, *491*(1–2), 208–217. https://doi.org/10.1016/j.ijpharm.2015.06.006

Harmita, K., Harahap, Y., dan Supandi. (2019). Liquid Chromatography-Tandem Mass Spectrometry. PT ISFI Penerbitan, Jakarta.

Henrique Rodrigues do Amaral, P., Lopes Andrade, P., & Costa de Conto, L. (2019). Microencapsulation and Its Uses in Food Science and Technology: A Review. In F. Salaün (Ed.), *Microencapsulation—Processes, Technologies and Industrial Applications*. IntechOpen. https://doi.org/10.5772/intechopen.81997

Huang, Y., Xiao, D., Burton-Freeman, B. M., & Edirisinghe, I. (2016). Chemical Changes of Bioactive Phytochemicals during Thermal Processing. In *Reference Module in Food Science*. Elsevier. https://doi.org/10.1016/B978-0-08-100596-5.03055-9

Ijanu, E. M., Kamaruddin, M. A., & Norashiddin, F. A. (2019). Coffee processing wastewater treatment: A critical review on current treatment technologies with a proposed alternative. *Applied Water Science*, *10*(1), 11. https://doi.org/10.1007/s13201-019-1091-9

Jamshidi, A., Antequera, T., Solomando, J. C., & Perez-Palacios, T. (2020). Microencapsulation of oil and protein hydrolysate from fish within a high-pressure homogenized double emulsion. *Journal of Food Science and Technology*, *57*(1), 60–69. https://doi.org/10.1007/s13197-019-04029-5

Khaire, R. A., & Gogate, P. R. (2019). Whey Proteins. In *Proteins: Sustainable Source, Processing and Applications* (pp. 193–223). Elsevier. https://doi.org/10.1016/B978-0-12-816695-6.00007-6

Khoddami, A., Wilkes, M. A., & Roberts, T. H. (2013). Techniques for analysis of plant phenolic compounds. *Molecules*, *18*(2), 2328–2375. https://doi.org/10.3390/molecules18022328

Kuck, L. S., & Noreña, C. P. Z. (2016). Microencapsulation of grape (Vitis labrusca var. Bordo) skin phenolic extract using gum Arabic, polydextrose, and partially hydrolyzed guar gum as encapsulating agents. *Food Chemistry*, *194*, 569–576. https://doi.org/10.1016/j.foodchem.2015.08.066

Kusmayadi, A., Adriani, L., Abun, A., Muchtaridi, M., & Tanuwiria, U. H. (2019). The microencapsulation of mangosteen peel extract with maltodextrin from arenga starch: Formulation and characterization. *Journal of Applied Pharmaceutical Science*, *9*(3), 33–40. https://doi.org/10.7324/JAPS.2019.90306

Lee, S. J., & Wong, M. (2014). Nano- and Microencapsulation of Phytochemicals. In H.-S. Kwak (Ed.), *Nano- and Microencapsulation for Foods* (pp. 117–165). John Wiley & Sons, Ltd. http://onlinelibrary.wiley.com/doi/10.1002/9781118292327.ch6/summary

Lee, Y.-K., Ganesan, P., Baharin, B. S., & Kwak, H.-S. (2015). Characteristics, stability, and release of peanut sprout extracts in powdered microcapsules by spray drying. *Drying Technology*, *33*(15–16), 1991–2001. Scopus. https://doi.org/10.1080/07373937.2014.951123

Lim, T. K. (2013). Coffea canephora. In T. K. Lim, *Edible Medicinal And Non-Medicinal Plants* (pp. 680–709). Springer Netherlands. http://link.springer.com/10.1007/978-94-007-5653-3_33

Mühlbauer, W., & Müller, J. (2020). Coffee (Coffea L., Rubiaceae). In *Drying Atlas* (pp. 247–256). Elsevier. https://doi.org/10.1016/B978-0-12-818162-1.00027-4

Mukkundur Vasudevaiah, A., Chaturvedi, A., Kulathooran, R., & Dasappa, I. (2017). Effect of green coffee extract on rheological, physico-sensory and antioxidant properties of bread. *Journal of Food Science and Technology*, *54*(7), 1827–1836. https://doi.org/10.1007/s13197-017-2613-9

Nallamuthu, I., Devi, A., & Khanum, F. (2015). Chlorogenic acid loaded chitosan nanoparticles with sustained release property, retained antioxidant activity and enhanced bioavailability. *Asian Journal of Pharmaceutical Sciences*, 10(3), 203-211. https://doi.org/10.1016/j.ajps.2014.09.005.

Nosari, A. B. F. L., Lima, J. F., Serra, O. A., & Freitas, L. A. P. (2015). Improved green coffee oil antioxidant activity for cosmetical purpose by spray drying microencapsulation. *Revista Brasileira de Farmacognosia*, *25*(3), 307–311. https://doi.org/10.1016/j.bjp.2015.04.006

Oestreich-Janzen, S. (2010). 3.25—Chemistry of Coffee. In H.-W. (Ben) Liu & L. Mander (Eds.), *Comprehensive Natural Products II* (pp. 1085–1117). Elsevier. https://doi.org/10.1016/B978-008045382-8.00708-5

Oliveira, B. E., Junior, P. C. G., Cilli, L. P., Contini, L. R. F., Venturini, A. C., Yoshida, C. M. P., & Braga, M. B. (2018). Spray-drying of grape skin-whey protein concentrate mixture. *Journal of Food Science and Technology*, *55*(9), 3693–3702. https://doi.org/10.1007/s13197-018-3299-3

Papoutsis, K., Golding, J. B., Vuong, Q., Pristijono, P., Stathopoulos, C. E., Scarlett, C. J., & Bowyer, M. (2018). Encapsulation of citrus by-product extracts by spray-drying and freeze-drying using combinations of maltodextrin with soybean protein and ι-carrageenan. *Foods*, *7*(7). https://doi.org/10.3390/foods7070115

Perrone, D., Farah, A., Donangelo, C. M., Paulis, T. de, & Martin, P. R. (2008). Comprehensive analysis of major and minor chlorogenic acids and lactones in economically relevant Brazilian coffee cultivars. *Food Chemistry*, *106*(2), 859–867. https://doi.org/10.1016/j.foodchem.2007.06.053

Pimpley, V., Patil, S., Srinivasan, K., Desai, N., & Murthy, P. S. (2020). The chemistry of chlorogenic acid from green coffee and its role in attenuation of obesity and diabetes. *Preparative Biochemistry & Biotechnology*, *50*(10), 969–978. https://doi.org/10.1080/10826068.2020.1786699

Piñón-Balderrama, C. I., Leyva-Porras, C., Terán-Figueroa, Y., Espinosa-Solís, V., Álvarez-Salas, C., & Saavedra-Leos, M. Z. (2020). Encapsulation of Active Ingredients in Food Industry by Spray-Drying and Nano Spray-Drying Technologies. *Processes*, *8*(8), 889. https://doi.org/10.3390/pr8080889

Premi, M., & Sharma, H. K. (2017). Effect of different combinations of maltodextrin, gum arabic and whey protein concentrate on the encapsulation behavior and oxidative stability of spray dried drumstick (Moringa oleifera) oil. *International Journal of Biological Macromolecules*. https://doi.org/10.1016/j.ijbiomac.2017.07.160

Ramos, O. L., Pereira, R. N., Rodrigues, R. M., Teixeira, J. A., Vicente, A. A., & Malcata, F. X. (2016). Whey and Whey Powders: Production and Uses. In B. Caballero, P. M. Finglas, & F. Toldrá (Eds.), *Encyclopedia of Food and Health* (pp. 498–505). Academic Press. http://www.sciencedirect.com/science/article/pii/B9780123849472007479

Rigon, R. T., & Zapata Noreña, C. P. (2016). Microencapsulation by spray-drying of bioactive compounds extracted from blackberry (rubus fruticosus). *Journal of Food Science and Technology*, *53*(3), 1515–1524. https://doi.org/10.1007/s13197-015-2111-x

Rocha, J. D. C. G., de Barros, F. A. R., Perrone, Í. T., Viana, K. W. C., Tavares, G. M., Stephani, R., & Stringheta, P. C. (2019). Microencapsulation by atomization of the mixture of phenolic extracts. *Powder Technology*, *343*, 317–325. Scopus. https://doi.org/10.1016/j.powtec.2018.11.040

Sakawulan, D., Archer, R., & Borompichaichartkul, C. (2018, September 11). Enhancing antioxidant property of instant coffee by microencapsulation via spray drying. *Proceedings of 21th International Drying Symposium*. 21st International Drying Symposium. https://doi.org/10.4995/IDS2018.2018.7520

Sarabandi, Kh., Peighambardoust, S. H., Sadeghi Mahoonak, A. R., & Samaei, S. P. (2018). Effect of different carriers on microstructure and physical characteristics of spray dried apple juice concentrate. *Journal of Food Science and Technology*, *55*(8), 3098–3109. https://doi.org/10.1007/s13197-018-3235-6

Satho, T., Dieng, H., Ahmad, M. H. I., Ellias, S. B., Hassan, A. A., Abang, F., Ghani, I. A., Miake, F., Ahmad, H., Fukumitsu, Y., Zuharah, W. F., Majid, A. H. A., Kassim, N. F. A., Hashim, N. A., Ajibola, O. O., Al-Khayyat, F. A., & Nolasco-Hipolito, C. (2015). Coffee and its waste repel gravid Aedes albopictus females and inhibit the development of their embryos. *Parasites & Vectors*, *8*. https://doi.org/10.1186/s13071-015-0874-6

Sharma, R. (2019). Whey Proteins in Functional Foods. In *Whey Proteins* (pp. 637–663). Elsevier. https://doi.org/10.1016/B978-0-12-812124-5.00018-7

Shimoda, H., Seki, E., & Aitani, M. (2006). Inhibitory effect of green coffee bean extract on fat accumulation and body weight gain in mice. *BMC Complementary and Alternative Medicine*, *6*, 9. https://doi.org/10.1186/1472-6882-6-9

Silva Faria, W. C., da Conceição, E. C., Moura, W. de M., Barros, W. M. de, Converti, A., & Bragagnolo, N. (2020). Design and evaluation of microencapsulated systems containing extract of whole green coffee fruit rich in phenolic acids. *Food Hydrocolloids*, *100*, 105437. https://doi.org/10.1016/j.foodhyd.2019.105437

Sobel, R., Gundlach, M., & Su, C.-P. (2014). Chapter 33—Novel Concepts and Challenges of Flavor Microencapsulation and Taste Modification. In A. G. Gaonkar, N. Vasisht, A. R. Khare, & R. Sobel (Eds.), *Microencapsulation in the Food Industry* (pp. 421–442). Academic Press. http://www.sciencedirect.com/science/article/pii/B9780124045682000339

Song, S. J., Choi, S., & Park, T. (2014). Decaffeinated Green Coffee Bean Extract Attenuates Diet-Induced Obesity and Insulin Resistance in Mice. *Evidence-Based Complementary and Alternative Medicine : ECAM*, *2014*. https://doi.org/10.1155/2014/718379

Tapsir, R., & Pa, N. A. N. (2018). *Reliability and Validity of the Instrument Measuring Values in Mathematics Classrooms*. *2*, 11.

Tavares, T., & Malcata, F. X. (2016). Whey and Whey Powders: Protein Concentrates and Fractions. In B. Caballero, P. M. Finglas, & F. Toldrá (Eds.), *Encyclopedia of Food and Health* (pp. 506–513). Academic Press. http://www.sciencedirect.com/science/article/pii/B9780123849472007480

Thomas, E., Puget, S., Valentin, D., & Songer, P. (2017). Chapter 18—Sensory Evaluation—Profiling and Preferences. In B. Folmer (Ed.), *The Craft and Science of Coffee* (pp. 419–456). Academic Press. https://doi.org/10.1016/B978-0-12-803520-7.00018-9

Tine, Y., Renucci, F., Costa, J., Wélé, A., & Paolini, J. (2017). A method for LC-MS/MS profiling of coumarins in zanthoxylum zanthoxyloides (Lam.) B. Zepernich and Timler extracts and essential oils. *Molecules*, *22*(1), 174. https://doi.org/10.3390/molecules22010174

USDA. (2021). *Coffea canephora Pierre ex Froehner*. https://plants.usda.gov/home/plantProfile?symbol=COCA39

Varastegani, B., Zzaman, W., Harivaindaran, K. V., Yang, T. A., Abdullah, W. N. W., Lee, L. K., & Easa, A. M. (2017). Effect of carrier agents on chemical properties and sensory evaluation of spray-dried Nigella sativa. *CyTA - Journal of Food*, *15*(3), 448–456. https://doi.org/10.1080/19476337.2017.1297960

Vasisht, N. (2014). Chapter 16—Selection of Materials for Microencapsulation. In A. G. Gaonkar, N. Vasisht, A. R. Khare, & R. Sobel (Eds.), *Microencapsulation in the Food Industry* (pp. 173–180). Academic Press. http://www.sciencedirect.com/science/article/pii/B9780124045682000169

Vinson, J. A., Chen, X., & Garver, D. D. (2019). Determination of total chlorogenic acids in commercial green coffee extracts. *Journal of Medicinal Food*, *22*(3), 314–320. https://doi.org/10.1089/jmf.2018.0039

Walzel, P., & Furuta, T. (2011). Morphology and Properties of Spray-Dried Particles. In E. Tsotsas & A. S. Mujumdar (Eds.), *Modern Drying Technology* (pp. 231–294). Wiley-VCH Verlag GmbH & Co. KGaA. http://onlinelibrary.wiley.com/doi/10.1002/9783527631667.ch6/summary

Wei, F., & Tanokura, M. (2015). Chapter 17—Organic Compounds in Green Coffee Beans. In V. R. Preedy (Ed.), *Coffee in Health and Disease Prevention* (pp. 149–162). Academic Press. https://doi.org/10.1016/B978-0-12-409517-5.00017-6

Zhang, Q.-W., Lin, L.-G., & Ye, W.-C. (2018). Techniques for extraction and isolation of natural products: A comprehensive review. *Chinese Medicine*, *13*, 20. https://doi.org/10.1186/s13020-018-0177-x