



## DAFTAR PUSTAKA

- Afoakwa, E. O. (2010). *Chocolate Science and Technology*. Wiley. <https://doi.org/10.1002/9781444319880>
- Afoakwa, E. O. (2016). *Chocolate Science and Technology* (E. O. Afoakwa (ed.); 2nd ed.). Wiley. <https://doi.org/10.1002/9781118913758>
- Afoakwa, E. O., Paterson, A., & Fowler, M. (2007). Factors influencing rheological and textural qualities in chocolate - a review. *Trends in Food Science and Technology*, 18(6), 290–298. <https://doi.org/10.1016/j.tifs.2007.02.002>
- Afoakwa, E. O., Paterson, A., & Fowler, M. (2008). Effects of particle size distribution and composition on rheological properties of dark chocolate. *European Food Research and Technology*, 226(6), 1259–1268. <https://doi.org/10.1007/s00217-007-0652-6>
- Afoakwa, E. O., Paterson, A., Fowler, M., & Vieira, J. (2008a). Characterization of melting properties in dark chocolates from varying particle size distribution and composition using differential scanning calorimetry. *Food Research International*, 41(7), 751–757. <https://doi.org/10.1016/j.foodres.2008.05.009>
- Afoakwa, E. O., Paterson, A., Fowler, M., & Vieira, J. (2008b). Effects of tempering and fat crystallisation behaviour on microstructure, mechanical properties and appearance in dark chocolate systems. *Journal of Food Engineering*, 89(2), 128–136. <https://doi.org/10.1016/j.jfoodeng.2008.04.021>
- Afoakwa, E. O., Paterson, A., Fowler, M., & Vieira, J. (2008c). Particle size distribution and compositional effects on textural properties and appearance of dark chocolates. *Journal of Food Engineering*, 87(2), 181–190. <https://doi.org/10.1016/j.jfoodeng.2007.11.025>
- Afoakwa, E. O., Paterson, A., Fowler, M., & Vieira, J. (2009). Fat bloom development and structure-appearance relationships during storage of under-tempered dark chocolates. *Journal of Food Engineering*, 91(4), 571–581. <https://doi.org/10.1016/j.jfoodeng.2008.10.011>
- Ahankari, S. S., Subhedar, A. R., Bhaduria, S. S., & Dufresne, A. (2021). Nanocellulose in food packaging: A review. *Carbohydrate Polymers*, 255(November 2020), 117479. <https://doi.org/10.1016/j.carbpol.2020.117479>
- Ahmed, E. M. (2015). *Hydrogel: Preparation , characterization , and applications : A review*. 105–121.
- Aidoo, R. P., Afoakwa, E. O., & Dewettinck, K. (2014). Optimization of inulin and polydextrose mixtures as sucrose replacers during sugar-free chocolate manufacture - Rheological, microstructure and physical quality characteristics. *Journal of Food Engineering*, 126, 35–42. <https://doi.org/10.1016/j.jfoodeng.2013.10.036>
- Al-Baarri, A. N., Legowo, A. M., Rizqiaty, H., Widayat, Septianingrum, A., Sabrina, H. N., Arganis, L. M., Saraswati, R. O., & Mochtar, R. C. P. R. (2018). Application of iota and kappa carrageenan to traditional several food using modified cassava flour. *IOP Conference Series: Earth and Environmental Science*, 102(1). <https://doi.org/10.1088/1755-1315/102/1/012056>
- Ali, Z., & Bhaskar, S. B. (2016). Basic statistical tools in research and data analysis.



- Indian Journal of Anaesthesia*, 60(9), 662–669. <https://doi.org/10.4103/0019-5049.190623>
- Ardakani, H. A., Mitsoulis, E., & Hatzikiriakos, S. G. (2014). Capillary flow of milk chocolate. *Journal of Non-Newtonian Fluid Mechanics*, 210, 56–65. <https://doi.org/10.1016/j.jnnfm.2014.06.001>
- Ariani, Y., Bintoro, N., & Karyadi, J. N. W. (2019). Kinetika Perubahan Kualitas Fisik Buah Mangga Selama Pengeringan Beku dengan Perlakuan Pendinginan Awal dan Ketebalan Irisan. *AgriTECH*, 39(4), 298. <https://doi.org/10.22146/agritech.42599>
- Badiger, M.V., McNeill, M.E., Graham, N.B. Porogens in the preparation of microporous hydrogels based on poly(ethylene oxides). *Biomaterials*, 14, 1059-1063.
- Bangun, S. K., Saputro, A. D., Fadilah, M. A. N., Rahayoe, S., Prasetyatama, Y. D., & Setiowati, A. D. (2022). A Preliminary study: The addition of konjac glucomannan-based hydrogel into chocolate increases the melting point of chocolate. *IOP Conference Series: Earth and Environmental Science*, 1038(1). <https://doi.org/10.1088/1755-1315/1038/1/012073>
- Barišić, V., Kopjar, M., Jozinović, A., Flanjak, I., Ačkar, Đ., Miličević, B., Šubarić, D., Jokić, S., & Babić, J. (2019). The chemistry behind chocolate production. *Molecules*, 24(17). <https://doi.org/10.3390/molecules24173163>
- Baron, A.M., Donnerstein, R.L., Samson, R.A., Baron, J.A., Padnick, J.N., & Goldberg, S.J. (1999). Hemodynamic and electrophysiologic effects of acute chocolate ingestion in young adults. *American Journal of Cardiology*, 84(3), 370-373
- Brasch, U. & Burchard, W. (1996). Preparation and solution properties of microhydrogels from poly(vinyl alcohol). *Macromolecular Chemistry and Physics*, 197(1), 223-235. <https://doi.org/10.1002/macp.1996.021970117>
- Becerra, L. D., Quintanilla-Carvajal, M. X., Escobar, S., & Ruiz, R. Y. (2023). Correlation between color parameters and bioactive compound content during cocoa seed transformation under controlled process conditions. *Food Bioscience*, 53, 102526. <https://doi.org/10.1016/j.fbio.2023.102526>
- Beckett, S. T. (2000). The science of chocolate. Royal Society of Chemistry Paperbacks.
- Beckett, S. T. (2008). The Science of Chocolate 2nd Edition. In Choice Reviews Online (Vol. 38, Issue 06). The Royal Society of Chemistry, Thomas Graham House, Science Park, Milton Road, Cambridge CB4 0WF, UK. <https://doi.org/10.5860/choice.38-3330>
- Beckett, S. T. (2009). Industrial chocolate manufacture and use / edited by Steve Beckett – 4th ed.
- Beckett, S.T. (2017). Beckett's Industrial Chocolate Manufacture and Use. 5ed. West Sussex: Wiley Blackwell. DOI:10.1002/9781118923597
- Beg, M. S., Ahmad, S., Jan, K., & Bashir, K. (2017). Status, supply chain and processing of cocoa - A review. *Trends in Food Science and Technology*, 66, 108–116. <https://doi.org/10.1016/j.tifs.2017.06.007>
- Benitez-Sánchez, P. L., León-Camacho, M., & Aparicio, R. (2003). A comprehensive study of hazelnut oil composition with comparisons to other



- vegetable oils, particularly olive oil. *European Food Research and Technology*, 218(1), 13–19. <https://doi.org/10.1007/s00217-003-0766-4>
- Blanco, E., Hodgson, D. J. M., Hermes, M., Besseling, R., Hunter, G. L., Chaikin, P. M., Cates, M. E., Van Damme, I., & Poon, W. C. K. (2019). Conching chocolate is a prototypical transition from frictionally jammed solid to flowable suspension with maximal solid content. *Proceedings of the National Academy of Sciences of the United States of America*, 116(21), 10303–10308. <https://doi.org/10.1073/pnas.1901858116>
- Böhme, B., Bickhardt, A., & Rohm, H. (2021). Pre-crystallization of nougat by seeding with cocoa butter crystals enhances the bloom stability of nougat pralines. *Foods*, 10(5). <https://doi.org/10.3390/foods10051056>
- Briones, V., Aguilera, J. M., & Brown, C. (2006). Effect of surface topography on color and gloss of chocolate samples. *Journal of Food Engineering*, 77(4), 776–783. <https://doi.org/10.1016/j.jfoodeng.2005.08.004>
- Campo, V. L., Kawano, D. F., Silva, D. B. da, & Carvalho, I. (2009). Carrageenans: Biological properties, chemical modifications and structural analysis - A review. *Carbohydrate Polymers*, 77(2), 167–180. <https://doi.org/10.1016/j.carbpol.2009.01.020>
- Cauvain, S.P. & Young, L.S. Chemical and physical deterioration of bakery products. In Chemical Deterioration and Physical Instability of Food and Beverages; Woodhead Publishing Limited: Bucks, UK, 2010; pp. 381–412.
- Cha, G.D., Lee, W.H., Lim, C., Choi, M.K., & Kim, D.H. (2020). Materials engineering, porcessing, and device application of hydrogels nanocomposites. *Nanoscale*, 12, 10456-10473.
- Chen, J., Zhang, Y. L., & Sun, J. (2011). An overview of the reducing principle of design of corrugated box used in goods packaging. *Procedia Environmental Sciences*, 10(PART B), 992–998. <https://doi.org/10.1016/j.proenv.2011.09.159>
- Cheng, H., Xu, H., Julian McClements, D., Chen, L., Jiao, A., Tian, Y., Miao, M., & Jin, Z. (2022). Recent advances in intelligent food packaging materials: Principles, preparation and applications. *Food Chemistry*, 375(December 2021). <https://doi.org/10.1016/j.foodchem.2021.131738>
- Choe, E., & Min, D. B. (2006). Chemistry and reactions of reactive oxygen species in foods. *Critical Reviews in Food Science and Nutrition*, 46(1), 1–22. <https://doi.org/10.1080/10408390500455474>
- Dahlenborg, H., Millqvist-Fureby, A., & Bergenstähl, B. (2015). Effect of shell microstructure on oil migration and fat bloom development in model pralines. *Food Structure*, 5, 51–65. <https://doi.org/10.1016/j.foostr.2015.06.002>
- Dias, J., Alvarengan, N., & Sousa, I. (2015). Effect of hydrocolloids on low-fat chocolate fillings. *Journal Food Science and Technology*, 52(11), 7209-7217. <https://doi.org/10.1007/s13197-015-1841-0>
- de Lima, C.S.A., Balogh, T.S., Varca, J.P.R.O, Varca, G.H.C., Lugao, A.B., Camacho-Cruz, L.A., Bucio, E., Kadlubowski, S.S. (2020). An updated review of macro, micro, and nanostructured hydrogels for biomedical and pharmaceutical applications. *Pharmaceutics*, 12(970), 1-28.
- de Melo, C. W. B., Bandeira, M. de J., Maciel, L. F., Bispo, E. da S., de Souza, C.



- O., & Soares, S. E. (2020). Chemical composition and fatty acids profile of chocolates produced with different cocoa (*Theobroma cacao l.*) cultivars. *Food Science and Technology (Brazil)*, 40(2), 326–333. <https://doi.org/10.1590/fst.43018>
- Debaste, F., Kegelaers, Y., Liégeois, S., Amor, H. Ben, & Halloin, V. (2008). Contribution to the modelling of chocolate tempering process. *Journal of Food Engineering*, 88(4), 568–575. <https://doi.org/10.1016/j.jfoodeng.2008.03.019>
- Delbaere, C. de Walle. D. V., Depypere, F., Gellynck, X., & Dewettinck, K. (2016). Relationship between chocolate microstructure, oil migration, and fat bloom in filled chocolates. *European Journal of Lipid Science and Technology*, 118(12), 1800-1826. <https://doi.org/10.1002/ejlt.201600164>
- Dicolla, C. B., Evans, J. L., Hainly, L. L., Celtruda, S. L., Brown, B. D., & Anantheswaran, R. C. (2019). Descriptive sensory analysis of heat-resistant milk chocolates. *Food Science and Nutrition*, 7(9), 2806–2816. <https://doi.org/10.1002/fsn3.1047>
- Ding, T., Liang, L., Yang, M., & Wu, H. (2016). Multiple Attribute Decision Making Based on Cross-Evaluation with Uncertain Decision Parameters. *Mathematical Problems in Engineering*, 2016. <https://doi.org/10.1155/2016/4313247>
- Do, T.A., Hargreaves, J., Wolf, B., Hort, J., & Mitchell, J. (2007). Impact of Particle Size Distribution on Rheological and Textural Properties Chocolate Models with Reduced Fat Content. *Journal of Food Sciences*, 541-552. <https://doi.org/10.1111/j.1750-3841.2007.00572.x>
- Espert, M., Hernández, M. J., Sanz, T., & Salvador, A. (2021). Reduction of saturated fat in chocolate by using sunflower oil-hydroxypropyl methylcellulose based oleogels. *Food Hydrocolloids*, 120(January 2021), 0–5. <https://doi.org/10.1016/j.foodhyd.2021.106917>
- Fernandes, V. A., Müller, A. J., & Sandoval, A. J. (2013). Thermal, structural and rheological characteristics of dark chocolate with different compositions. *Journal of Food Engineering*, 116(1), 97–108. <https://doi.org/10.1016/j.jfoodeng.2012.12.002>
- Figura, L. O., & Teixeira, A. A. (2007). *Food Physics: Physical Properties - Measurement and Applications*. Springer Berlin Heidelberg. <https://doi.org/10.1007/b107120>
- Franke, K., Middendorf, D., Heinz, V., & Bindrich, U. (2022). Alcohol in praline fillings influences the water migration within the surrounding chocolate shell. *Journal of Food Engineering*, 315(August 2021). <https://doi.org/10.1016/j.jfoodeng.2021.110805>
- Gadhave, M. S. and Hingane, L. D. (2022). Review On Study Of Different Order Of Reaction. *International Journal of Creavice Reserch Thoughts*, 10(6), 472–490.
- Ghosh, V., Ziegler, G. R., & Anantheswaran, R. C. (2002). Fat, moisture, and ethanol migration through chocolates and confectionary coatings. *Critical Reviews in Food Science and Nutrition*, 42(6), 583–626. <https://doi.org/10.1080/20024091054265>
- Gibson, M., & Newsham, P. (2018). Chocolate/Cacao. *Food Science and the*



- Culinary Arts, 341–352. <https://doi.org/10.1016/b978-0-12-811816-0.000178>
- Glicerina, V., Balestra, F., Dalla Rosa, M., & Romani, S. (2015). Effect of manufacturing process on the microstructural and rheological properties of milk chocolate. *Journal of Food Engineering*, 145, 45–50. <https://doi.org/10.1016/j.jfoodeng.2014.06.039>
- Haritha, K., Kalyani, L., & Rao, A. L. (2014). Health Benefits of Dark Chocolate. *Journal of Advanced Drug Delivery*, 1(4), 184–195. [www.jadd.in](http://www.jadd.in)
- Hartel, R. W., Von Elbe, J. H., & Hofberger, R. (2018). Chocolate and compound coatings. In *Confectionery Science and Technology*. Springer.
- Hidayati, S., Sartika, D., Sutoyo, S., & Fudholi, A. (2022). Predict the Shelf Life of Instant Chocolate in Vacuum Packing by Using Accelerated Shelf Life Test (ASLT). *Mathematical Modelling of Engineering Problems*, 9(2), 443–450. <https://doi.org/10.18280/mmep.090220>
- Hisham A. Maddah. (2016). Polypropylene as a Promising Plastic: A Review. *American Journal of Polymer Science*, 6(1), 1–11. <https://doi.org/10.5923/j.ajps.20160601.01>
- Hřívna, L., Machálková, L., Burešová, I., Nedomová, Š., & Gregor, T. (2021). Texture, color, and sensory changes occurring in chocolate bars with filling during storage. *Food Science and Nutrition*, 9(9), 4863–4873. <https://doi.org/10.1002/fsn3.2434>
- Hurko-Romeyko Izabela, Kowalska Jolanta, & Pochitskaya Irina. (2020). Cocoa powder as source of phenolic compounds, determining factors - a review. *Warsaw University of Life Sciences (WULS)*.
- Hussain, N., Agus, B. A. P., Rahim, S. N. F. A., & Halim, H. S. A. (2018). Comparison of quality characteristics between compound and pure milk chocolate. *MOJ Food Processing & Technology*, 6(3). <https://doi.org/10.15406/mojfpt.2018.06.00178>
- Jollife, I. T., & Cadima, J. (2016). Principal component analysis: A review and recent developments. *Philosophical Transactions of the Royal Society A: Mathematical, Physical and Engineering Sciences*, 374(2065). <https://doi.org/10.1098/rsta.2015.0202>
- Keijbets, E. L., Chen, J., & Vieira, J. (2010). Chocolate demoulding and effects of processing conditions. *Journal of Food Engineering*, 98(1), 133–140. <https://doi.org/10.1016/j.jfoodeng.2009.12.019>
- Kita, A., Lachowicz, S., & Filutowska, P. (2020). Effects of package type on the quality of fruits and nuts panned in chocolate during long-time storage. *Lwt*, 125(January). <https://doi.org/10.1016/j.lwt.2020.109212>
- Kozlowska, J., Pauter, K., & Sionkowska, A. Carrageenan-based hydrogels: effect od sorbitol and glycerin on the stability, swelling, and mechanical properties. *Polymer testing*, 67, 7-11. <https://doi.org/10.1016/j.polymertesting.2018.02.016>
- Kusumawardani, I. N. S., Saputro, A. D., Kusuma, M. C., Fadilah, M. A. N., Setiowati, A. D., & Rahayoe, S. (2023). Melting and Textural Characteristics of Dark Chocolate Formulated with Carrageenan-based Hydrogel Sweetened with Sucrose. *Proceedings of the International Conference on Sustainable Environment, Agriculture and Tourism (ICOSEAT 2022)*, 26, 413–418.



- [https://doi.org/10.2991/978-94-6463-086-2\\_55](https://doi.org/10.2991/978-94-6463-086-2_55)
- Lamberti, M., & Escher, F. (2007). Aluminium foil as a food packaging material in comparison with other materials. *Food Reviews International*, 23(4), 407–433. <https://doi.org/10.1080/87559120701593830>
- Lapčíková, B., Lapčík, L., Salek, R., Valenta, T., Lorencová, E., & Vašina, M. (2022). Physical characterization of the milk chocolate using whey powder. *Lwt*, 154(July 2021). <https://doi.org/10.1016/j.lwt.2021.112669>
- Lascombes, C., Agoda-Tandjawa, G., Boulenguer, P., Garnec, C.L., Gilles, M., Mauduit, Barey, P. & langendorff, V. (2016). Starch-carrageenan interactions in aqueous media: role of each polysaccharide chemical and macromolecular characteristics. *J. Food Hydrocolloids*, 30, 1-14.
- Łatuszyńska, A. (2014). Multiple-Criteria Decision Analysis Using Topsis Method For Interval Data In Research Into The Level Of Information Society Development. *Folia Oeconomica Stetinensis*, 13(2), 63–76. <https://doi.org/10.2478/foli-2013-0015>
- Leyva-Soto, A., Chavez-Santoscoy, R. A., Lara-Jacobo, L. R., Chavez-Santoscoy, A. V., & Gonzalez-Cobian, L. N. (2018). Daily consumption of chocolate rich in flavonoids decreases cellular genotoxicity and improves biochemical parameters of lipid and glucose metabolism. *Molecules*, 23(9). <https://doi.org/10.3390/molecules23092220>
- Lillah, Asghar, A., Pasha, I., Murtaza, G., & Ali, M. (2017). Improving heat stability along with quality of compound dark chocolate by adding optimized cocoa butter substitute (hydrogenated palm kernel stearin) emulsion. *Lwt*, 80, 531–536. <https://doi.org/10.1016/j.lwt.2017.02.042>
- Liu, H., & Zhou, F. (2023). Causal relationship between milk chocolate intake and calf pain: A Mendelian randomization analysis. *Journal of Functional Foods*, 110(October). <https://doi.org/10.1016/j.jff.2023.105851>
- Lohman, M.H., Hartel, R.W. (1994). Effect of milk fat fractions on fat bloom in dark chocolate. *Journal of The American Oil Chemists' Society*, 71, 267–276. <https://doi.org/10.1007/BF02638052>
- Loisel C., Lecq G., Keller G. and Ollivon M. (1998). Dynamic crystallization of dark chocolate as affected by temperature and lipid additives. *Journal of Food Science*, 63(1): 73–79.
- Lončarević, I., Pajin, B., Petrović, J., Nikolić, I., Maravić, N., Ačkar, Đ., Šubarić, D., Zarić, D., & Miličević, B. (2021). White chocolate with resistant starch: Impact on physical properties, dietary fiber content and sensory characteristics. *Molecules*, 26(19). <https://doi.org/10.3390/molecules26195908>
- Lonchampt, P., & Hartel, R. W. (2004). Fat bloom in chocolate and compound coatings. *European Journal of Lipid Science and Technology*, 106(4), 241–274. <https://doi.org/10.1002/ejlt.200400938>
- Luo, M. R., & Li, C. (2013). *Advanced Color Image Processing and Analysis* (C. Fernandez-Maloigne (ed.)). Springer New York. <https://doi.org/10.1007/978-1-4419-6190-7>
- Machálková, L., Hřívna, L., Nedomová, Š., & Jůzl, M. (2015). The effect of storage temperature on the quality and formation of blooming defects in chocolate



- confectionery. *Potravinarstvo*, 9(1), 39–47. <https://doi.org/10.5219/425>
- Marsh, K., & Bugusu, B. (2007). Food packaging - Roles, materials, and environmental issues: Scientific status summary. *Journal of Food Science*, 72(3). <https://doi.org/10.1111/j.1750-3841.2007.00301.x>
- Marvig, C. L., Kristiansen, R. M., Madsen, M. G., & Nielsen, D. S. (2014). Identification and characterisation of organisms associated with chocolate pralines and sugar syrups used for their production. *International Journal of Food Microbiology*, 185, 167–176. <https://doi.org/10.1016/j.ijfoodmicro.2014.05.017>
- Minife. (1989). Chocolate, Cocoa and Confectionery: science and technology 2nd ed (Connectitut : AVI Publishing)
- Mohamadi Alasti, F., Asefi, N., Maleki, R., & SeiiedlouHeris, S. S. (2019). Investigating the flavor compounds in the cocoa powder production process. *Food Science and Nutrition*, 7(12), 3892–3901. <https://doi.org/10.1002/fsn3.1244>
- Montagna, M. T., Diella, G., Triggiano, F., Caponio, G. R., De Giglio, O., Caggiano, G., Di Ciaula, A., & Portincasa, P. (2019). Chocolate, “food of the gods”: History, science, and human health. *International Journal of Environmental Research and Public Health*, 16(24). <https://doi.org/10.3390/ijerph16244960>
- Muhammad, D. R. A., Lemarcq, V., Alderweireldt, E., Vanoverberghe, P., Praseptiangga, D., Juvinal, J. G., & Dewettinck, K. (2020). Antioxidant activity and quality attributes of white chocolate incorporated with Cinnamomum burmannii Blume essential oil. *Journal of Food Science and Technology*, 57(5), 1731–1739. <https://doi.org/10.1007/s13197-019-04206-6>
- Murmu, S. B., & Mishra, H. N. (2018). Selection of the best active modified atmosphere packaging with ethylene and moisture scavengers to maintain quality of guava during low-temperature storage. *Food Chemistry*, 253(May 2017), 55–62. <https://doi.org/10.1016/j.foodchem.2018.01.134>
- Nisa, N. H., Saputro, A. D., Kusumawardani, I. N. S., Fadilah, M. A. N., Setiowati, A. D., & Rahayoe, S. (2023). The appearance and textural characteristic of couverture praline chocolate filled with carrageenan-based hydrogel. *IOP Conference Series: Earth and Environmental Science*, 1200(1). <https://doi.org/10.1088/1755-1315/1200/1/012018>
- Nowacka, M., Rybak, K., Wiktor, A., Mika, A., Boruszewski, P., Woch, J., Przybysz, K., & Witrowa-Rajchert, D. (2018). The quality and safety of food contact materials – paper and cardboard coated with paraffin emulsion. *Food Control*, 93(February), 183–190. <https://doi.org/10.1016/j.foodcont.2018.06.011>
- Nugraheni, M. (2018). *Kemasan Pangan* (1st ed.). Plantaxia.
- Ogunsina, B. S., Adeyemi, M. A., Morakinyo, T. A., Aremu, O. J., & Bamgboye, A. I. (2017). Direct energy utilization in the processing of cocoa beans into powder. *Agricultural Engineering International: CIGR Journal*, 19(3), 213–218.
- Ornelas-Paz, J. D. J., Zamudio-Flores, P. B., Torres-Cisneros, C. G., Holguín-Soto, R., Ramos-Aguilar, O. P., Ruiz-Cruz, S., Guevara-Arauza, J. C., González-



- Aguilar, G. A., & Santana-Rodríguez, V. (2012). The barrier properties and potential use of recycled-LDPE films as a packaging material to preserve the quality of Jalapeño peppers by modified atmospheres. *Scientia Horticulturae*, 135, 210–218. <https://doi.org/10.1016/j.scienta.2011.11.033>
- Ostrowska-Ligęza, E., Marzec, A., Górska, A., Wirkowska-Wojdyła, M., Bryś, J., Rejch, A., & Czarkowska, K. (2019). A comparative study of thermal and textural properties of milk, white and dark chocolates. *Thermochimica Acta*, 671(July 2018), 60–69. <https://doi.org/10.1016/j.tca.2018.11.005>
- Pastor, C., Santamaría, J., Chiralt, A., & Aguilera, J. M. (2007). Gloss and colour of dark chocolate during storage. *Food Science and Technology International*, 13(1), 27–34. <https://doi.org/10.1177/1082013207075664>
- Pham, N. T.-H. (2021). Characterization of Low-Density Polyethylene and. *Polymers*, 13(14), 2352.
- Phillips, G. O., & Williams, P. A. (2009). Handbook of Hydrocolloids: Second Edition. In *Handbook of Hydrocolloids: Second Edition*. <https://doi.org/10.1533/9781845695873>
- Popov-Raljić, J. V. & Laličić-Petronijević, J.G.(2009). Sensory properties and color measurements of dietary chocolates with different compositions during storage for up to 360 days Sensors 9, 3 p. 1996–2016.
- Rafsanjani, N. D., Daneshi, M., & Shakerardekani, A. (2018). Journal of Nuts. *Journal of Nuts*, 9(January), 169–179. <https://doi.org/10.22034/jon.2018.542998>
- Rahim, R., Supiyandi, S., Siahaan, A. P. U., Listyorini, T., Utomo, A. P., Triyanto, W. A., Irawan, Y., Aisyah, S., Khairani, M., Sundari, S., & Khairunnisa, K. (2018). TOPSIS Method Application for Decision Support System in Internal Control for Selecting Best Employees. *Journal of Physics: Conference Series*, 1028(1). <https://doi.org/10.1088/1742-6596/1028/1/012052>
- Ramli, N., Rahman, S. A., Hassan, O., Yatim, A. M., Said, M., Siang, L. L., & Fong, N. W. (2000). Caffeine and theobromine levels in chocolate couverture and coating products. *Malaysian Journal of Nutrition*, 6(1), 55–65.
- Ran, J., & Liu, C. (2019). Modeling of the Stiffness of Corrugated Cardboard Considering Material Non-linear Effect. *Journal of Physics: Conference Series*, 1187(3). <https://doi.org/10.1088/1742-6596/1187/3/032069>
- Rudolph, B. (2000). Seaweed product: Red algae of economic significance. In R. E. Martin, E. P. Carter, L. M. Davis, & G. J. Fliech (Eds.), *Marine and freshwater products handbook* (pp. 515–529). Lancaster, USA: Technomic Publishing Company Inc..
- Rosmindari, S., Saputro, A. D., & Bintoro, N. (2023). Changes of Dark Couverture Chocolate Hardness During Storage Tempered Using Automatic Tempering Machine with Tank and Tempering Temperature as Variables. *BIO Web of Conferences*, 80. <https://doi.org/10.1051/bioconf/20238004002>
- Saji, V. S. (2020). Wax-based artificial superhydrophobic surfaces and coatings. *Colloids and Surfaces A: Physicochemical and Engineering Aspects*, 602(May), 125132. <https://doi.org/10.1016/j.colsurfa.2020.125132>
- San, H., Laorenza, Y., Behzadfar, E., Sonchaeng, U., Wadaugsorn, K., Sodsai, J., Kaewpatch, T., Promhuad, K., Srisa, A., Wongphan, P., & Harnkarnsujarit, N.



- (2022). Functional Polymer and Packaging Technology for Bakery Products. *Polymers*, 14(18), 0–29. <https://doi.org/10.3390/polym14183793>
- Saputro, A. D., Muhammad, D. R. A., Sunarharum, W. B., Kusumadevi, Z., & Irmandharu, F. (2021). Physical characteristics of chocolate made from cocoa bean fermented at different duration: A preliminary study. *IOP Conference Series: Earth and Environmental Science*, 653(1). <https://doi.org/10.1088/1755-1315/653/1/012039>
- Saputro, A. D., Nur Fadilah, M. A., Keegen Bangun, S., Rahayoe, S., Wahyu Karyadi, J. N., & Setiowati, A. D. (2022). Physical Characteristic of Heat Resistant Chocolate Formulated with Konjac Glucomannan and Xanthan Gum-Based Hydrogel at Various Fat Content during Period of Crystal Growth (Maturation). *Jurnal Teknik Pertanian Lampung (Journal of Agricultural Engineering)*, 11(4), 658. <https://doi.org/10.23960/jtep-l.v11i4.658-670>
- Saputro, A. D., Van de Walle, D., Aidoo, R. P., Mensah, M. A., Delbaere, C., De Clercq, N., Van Durme, J., & Dewettinck, K. (2017). Quality attributes of dark chocolates formulated with palm sap-based sugar as nutritious and natural alternative sweetener. *European Food Research and Technology*, 243(2), 177–191. <https://doi.org/10.1007/s00217-016-2734-9>
- Saputro, A. D., Van de Walle, D., Kadivar, S., Bin Sintang, M. D., Van der Meer, P., & Dewettinck, K. (2017). Investigating the rheological, microstructural and textural properties of chocolates sweetened with palm sap-based sugar by partial replacement. *European Food Research and Technology*, 243(10), 1729–1738. <https://doi.org/10.1007/s00217-017-2877-3>
- Schaefer, D., & Cheung, W. M. (2018). Smart Packaging: Opportunities and Challenges. *Procedia CIRP*, 72(March), 1022–1027. <https://doi.org/10.1016/j.procir.2018.03.240>
- Seem, S. A., Yuan, Y. V., & Tou, J. C. (2019). Chocolate and chocolate constituents influence bone health and osteoporosis risk. *Nutrition*, 65, 74–84. <https://doi.org/10.1016/j.nut.2019.02.011>
- Selvasekaran, P., & Chidambaram, R. (2021). Advances in formulation for the production of low-fat, fat-free, low-sugar, and sugar-free chocolates: An overview of the past decade. *Trends in Food Science and Technology*, 113(May), 315–334. <https://doi.org/10.1016/j.tifs.2021.05.008>
- Šerešová, M., & Kočí, V. (2020). Proposal of package-to-product indicator for carbon footprint assessment with focus on the Czech Republic. *Sustainability (Switzerland)*, 12(7). <https://doi.org/10.3390/su12073034>
- Sharma, V., Nani, D., & Kumar, R. (2019). Spectroscopic and chemometric evaluation of cling films used for wrapping of foodstuff and illicit drugs. *Spectrochimica Acta - Part A: Molecular and Biomolecular Spectroscopy*, 206, 558–568. <https://doi.org/10.1016/j.saa.2018.08.052>
- Siracusa, V. (2012). Food packaging permeability behaviour: A report. *International Journal of Polymer Science*, 2012(i). <https://doi.org/10.1155/2012/302029>
- Siregar, S. Z., Saputro, A. D., Edi, Fadilah, M. A. N., Susanti, D. Y., & Setiowati, A. D. (2023). The impact of shell formation duration during manual tempering process on the hardness and melting point of couverture praline chocolate. *IOP*



- Conference Series: Earth and Environmental Science*, 1200(1).  
<https://doi.org/10.1088/1755-1315/1200/1/012017>
- Soares, D. S., Bolgar, G., Dantas, S. T., Augusto, P. E. D., & Soares, B. M. C. (2019). Interaction between aluminium cans and beverages: Influence of catalytic ions, alloy and coating in the corrosion process. *Food Packaging and Shelf Life*, 19(May 2018), 56–65. <https://doi.org/10.1016/j.fpsl.2018.11.012>
- Sri, W., Galih, A., & Iman, S. (2020). Shelf Life Determination of Pegagan (Centella asiatica) Chips Using Accelerated Shelf-Life Testing (ASLT) Method. *Agroindustrial Journal*, 6(1), 396. <https://doi.org/10.22146/aij.v6i1.53957>
- Swasty, W., Putri, M. K., Koesoemadinata, M. I. P., & Gunawan, A. N. S. (2021). the Effect of Packaging Color Scheme on Perceptions, Product Preferences, Product Trial, and Purchase Intention. *Jurnal Manajemen Dan Kewirausahaan*, 23(1), 27–39. <https://doi.org/10.9744/jmk.23.1.27-39>
- Tan, J., & Balasubramanian, B. M. (2017). Particle size measurements and scanning electron microscopy (SEM) of cocoa particles refined/conched by conical and cylindrical roller stone melangers. *Journal of Food Engineering*, 212, 146–153. <https://doi.org/10.1016/j.jfoodeng.2017.05.033>
- Tarigan, E.B.R., Towaha, J., Iflah, T., & Pranowo, D. (2016). Substitusi lemak kakao dengan minyak dari inti kelapa sawit dan kelapa terhidrogenasi untuk produk cokelat susu. *Jurnal Littri*, 22(4), 167-175.
- Toker, O. S., Konar, N., Pirouzian, H. R., Oba, S., Polat, D. G., Palabiyik, İ., Poyrazoglu, E. S., & Sagdic, O. (2018). Developing functional white chocolate by incorporating different forms of EPA and DHA - Effects on product quality. *Lwt*, 87, 177–185. <https://doi.org/10.1016/j.lwt.2017.08.087>
- V. Jegadeeswari, K. A. (2019). Evaluating the processed beans of different cocoa (*Theobroma cacao L.*) accessions for quality parameters. *Journal of Phytology*, 11, 01–04. <https://doi.org/10.25081/jp.2019.v11.20190115>
- Vanderroost, M., Ragaert, P., Devlieghere, F., & De Meulenaer, B. (2014). Intelligent food packaging: The next generation. *Trends in Food Science and Technology*, 39(1), 47–62. <https://doi.org/10.1016/j.tifs.2014.06.009>
- Vasile, C., & Baican, M. (2021). Progresses in food packaging, food quality, and safetyzcontrolled-release antioxidant and/or antimicrobial packaging. *Molecules*, 26(5), 1–49. <https://doi.org/10.3390/molecules26051263>
- Watanabe, R., Hagiwara, H., & Sato, H. (2018). Structure-property relationships of polypropylene-based nanocomposites obtained by dispersing mesoporous silica into hydroxyl-functionalized polypropylene. Part 1: toughness, stiffness and transparency. *Polymer Journal*, 50(11), 1057–1065. <https://doi.org/10.1038/s41428-018-0095-x>
- Webber, V., Carvalho, S. M. D., Ogliari, P. J., Hayashi, L., & Barreto, P. L. M. (2012). Optimization of the extraction of carrageenan from *Kappaphycus alvarezii* using response surface methodology. *Ciência e Tecnologia de Alimentos*, 32(4), 812–818. <https://doi.org/http://dx.doi.org/10.1590/S0101-20612012005000111>
- Widlak, N. R., & Hartel, R. W. (2012). Causes and Best Manufacturing Practices to Minimize Bloom in Confections. In N. Garti, & N. R. Widlak (Eds.), *Cocoa*



- butter and related compounds (pp. 173– 194). AOCS Press. <https://doi.org/10.1016/B978-0-9830791-2-5.50010-4>
- Wille, R.L., & Lutton, E.S. (1966). Polymorphism of cocoa butter. *Journal of The American Oil Chemists' Society*, 43, 491–496. <https://doi.org/10.1007/BF02641273>
- Zhang, T., Xu, X., Ji, L., Li, Z., Wang, Y., Xue, Y., & Xue, C. (2017). Phase behaviors involved in surimi gel system: Effects of phase separation on gelation of myofibrillar protein and kappa-carrageenan. *Food Research International*, 100(May), 361–368. <https://doi.org/10.1016/j.foodres.2017.07.025>
- Zhao, H., Young, A.K., & James, B.J. (2018). Effects of fat polymorphic transformation and nonfat particle size distribution on the surface changes of untempered model chocolate, based on solid cocoa mass. *Journal Food Science*, 83(4), 998–1004. <https://doi.org/10.1111/1750-3841.14108>
- Zhao, H., & James, B. J. (2019). Fat bloom formation on model chocolate stored under steady and cycling temperatures. *Journal of Food Engineering*, 249, 9–14. <https://doi.org/10.1016/j.jfoodeng.2018.12.008>
- Ziegler, G. R., & Hogg, R. (2009). Particle Size Reduction. In *Industrial Chocolate Manufacture and Use: Fourth Edition* (pp. 142-168). Wiley-Blackwell. <https://doi.org/10.1002/9781444301588.ch7>
- Zugravu, C., & Otelea, M. R. (2019). Dark chocolate: To eat or not to eat? A review. *Journal of AOAC International*, 102(5), 1388–1396. <https://doi.org/10.5740/jaoacint.19-0132>
- Žuljević, S. O., Muhović, L., & Oras, A. (2024). *The Effect of Storage Temperature on Chocolate Texture*. 265. <https://doi.org/10.3390/proceedings2023091265>