

## DAFTAR PUSTAKA

- Adaptar, L. A., Nuñez, J. A., Tan, M. C., Ting, J., Galian, R. A., Ondevilla, J. C., & Bonto, A. (2024). Chemical composition and thermal characterization of selected Philippine cacao (*Theobroma cacao* L.) and tablea. *SciEnggJ*, 17(2), 175–188. <https://doi.org/10.54645/2024172WRS-32>
- Afoakwa, E. O. (2010). *Chocolate Science and Technology* (1st ed.). Wiley. <https://doi.org/10.1002/9781444319880>
- Application of Differential Scanning Calorimetry and Thermogravimetry for Thermal Analysis of Dark Chocolates*. (n.d.). Retrieved March 15, 2026, from <https://www.mdpi.com/2076-3417/14/20/9502>
- Asbbane, A., Bousaid, Z., Guillaume, D., El Harkaoui, S., Matthäus, B., Charrouf, Z., Goh, K. W., Srasom, N., Bouayahya, A., & Gharby, S. (2024). Effects of physical refining process on quality and stability of argan oil (*Argania Spinosa* (L.) Skeels). *Scientific Reports*, 14(1), 23045. <https://doi.org/10.1038/s41598-024-74466-6>
- Ashida, H., Morita, A., Karatani, N., Sato, R., & Sato, K. (2020). Surface topographic analysis of early stages of fat bloom of dark chocolate with 3D-laser scanning confocal microscopy (3D-LSCM). *Food Structure*, 23, 100136. <https://doi.org/10.1016/j.foostr.2020.100136>
- Ayoka, T., Nwachukwu, N., A.C, E., Igwe, C., Ogara, A., & Nnadi, C. (2022). In-Vitro Antioxidant Activity and Acute Toxicity of the Alkaloidal Constituents of *Zanthoxylum zanthoxyloides* Leaves. *Tropical Journal of Pharmaceutical Research*, 6, 276–280. <https://doi.org/10.26538/tjnpr/v6i2.17>
- Bekdeşer, B., Esin Çelik, S., Bener, M., Dondurmacioğlu, F., Yıldırım, E., Nida Yavuz, E., & Apak, R. (2024). Determination of primary and secondary oxidation products in vegetable oils with gold nanoparticle based fluorometric turn-on nanosensor: A new total oxidation value. *Food Chemistry*, 434, 137426. <https://doi.org/10.1016/j.foodchem.2023.137426>
- Bhuiyan, Md. H. R., Yeasmen, N., & Orsat, V. (2026). Food surface characterization by scanning electron microscopy and fractal analysis: A review. *Food Chemistry*, 498, 147148. <https://doi.org/10.1016/j.foodchem.2025.147148>

- Buljat, A. M., Jurina, T., Jurinjak Tušek, A., Valinger, D., Gajdoš Kljusurić, J., & Benković, M. (2019). Applicability of Foam Mat Drying Process for Production of Instant Cocoa Powder Enriched with Lavender Extract. *Food Technology and Biotechnology*, 57(2), 159–170. <https://doi.org/10.17113/ftb.57.02.19.6064>
- Chen, J., Ghazani, S. M., Stobbs, J. A., & Marangoni, A. G. (2021). Tempering of cocoa butter and chocolate using minor lipidic components. *Nature Communications*, 12(1), 5018. <https://doi.org/10.1038/s41467-021-25206-1>
- Chen, Z., Zheng, J., & Zhou, L. (2025). A universal strategy for real-time discrimination and evaluation of food freshness using natural colorants as indicators: From detection to antioxidant and antibacterial properties. *Npj Science of Food*, 9(1), 213. <https://doi.org/10.1038/s41538-025-00568-8>
- Choi, J. Y., Park, M. K., & Cho, I. H. (2025). Evolution of oxidation markers and rancid off-flavors in *Tenebrio molitor* mealworm oil during thermal oxidation. *Food Science and Biotechnology*, 34(16), 3829–3847. <https://doi.org/10.1007/s10068-025-01999-5>
- Chong, Y. M., Chang, S. K., Sia, W. C. M., & Yim, H. S. (2015). Antioxidant efficacy of mangosteen (*Garcinia mangostana* Linn.) peel extracts in sunflower oil during accelerated storage. *Food Bioscience*, 12, 18–25. <https://doi.org/10.1016/j.fbio.2015.07.002>
- Choulitoudi, E., Xristou, M., Tsimogiannis, D., & Oreopoulou, V. (2021). The effect of temperature on the phenolic content and oxidative stability of o/w emulsions enriched with natural extracts from *Satureja thymbra*. *Food Chemistry*, 349, 129206. <https://doi.org/10.1016/j.foodchem.2021.129206>
- De Silva Souza, C., & Block, J. M. (2018). Impact of the addition of cocoa butter equivalent on the volatile compounds profile of dark chocolate. *Journal of Food Science and Technology*, 55(2), 767–775. <https://doi.org/10.1007/s13197-017-2989-6>
- Dehghani, P., Taheri, F., & Asgary, S. (2024). Decoding the Delights: Unraveling the Health Benefits of Dark Chocolate in Comparison to White Chocolate. *Functional Food Science - Online ISSN: 2767-3146*, 4(4), 119–133. <https://doi.org/10.31989/ffs.v4i4.1300>

- Dery, B., & Zaixiang, L. (2023). Scanning Electron Microscopy (SEM) as an Effective Tool for Determining the Morphology and Mechanism of Action of Functional Ingredients. *Food Reviews International*, 39(4), 2007–2026. <https://doi.org/10.1080/87559129.2021.1939368>
- Durmus, D. (2020). CIELAB color space boundaries under theoretical spectra and 99 test color samples. *Color Research & Application*, 45(5), 796–802. <https://doi.org/10.1002/col.22521>
- El Hosry, L., Elias, V., Chamoun, V., Halawi, M., Cayot, P., Nehme, A., & Bou-Maroun, E. (2025). Maillard Reaction: Mechanism, Influencing Parameters, Advantages, Disadvantages, and Food Industrial Applications: A Review. *Foods*, 14(11), 1881. <https://doi.org/10.3390/foods14111881>
- Eze, C. N., Aduba, C. C., Ezema, B. O., Ayoka, T. O., Nnadi, C. O., & Onyeaka, H. (2025). The role of antioxidants in food safety and preservation: Mechanisms, applications, and challenges. *Cogent Food & Agriculture*, 11(1), 2591436. <https://doi.org/10.1080/23311932.2025.2591436>
- Fu, X., Belwal, T., Cravotto, G., & Luo, Z. (2020). Sono-physical and sono-chemical effects of ultrasound: Primary applications in extraction and freezing operations and influence on food components. *Ultrasonics Sonochemistry*, 60, 104726. <https://doi.org/10.1016/j.ultsonch.2019.104726>
- García-Muñoz, A. M., García-Guillén, A. I., Victoria-Montesinos, D., Abellán-Ruiz, M. S., Alburquerque-González, B., & Cánovas, F. (2023). Effect of the Combination of Hibiscus sabdariffa in Combination with Other Plant Extracts in the Prevention of Metabolic Syndrome: A Systematic Review and Meta-Analysis. *Foods*, 12(11), 2269. <https://doi.org/10.3390/foods12112269>
- Gharby, S., Asbbane, A., Nid Ahmed, M., Gagour, J., Hallouch, O., Oubannin, S., Bijla, L., Goh, K. W., Bouyahya, A., & Ibourki, M. (2025). Vegetable oil oxidation: Mechanisms, impacts on quality, and approaches to enhance shelf life. *Food Chemistry: X*, 28, 102541. <https://doi.org/10.1016/j.fochx.2025.102541>
- Ghorbani Gorji, S., Calingacion, M., Smyth, H. E., & Fitzgerald, M. (2019). Effect of natural antioxidants on lipid oxidation in mayonnaise compared with BHA, the

- industry standard. *Metabolomics: Official Journal of the Metabolomic Society*, 15(8), 106. <https://doi.org/10.1007/s11306-019-1568-4>
- Gomes, S. M., Miranda, R., & Santos, L. (2025). Enhancing the Biological Properties of White Chocolate: Moringa oleifera Leaf Extract as a Natural Functional Ingredient. *Foods*, 14(3), 359. <https://doi.org/10.3390/foods14030359>
- Gordon, M. H. (1990). The Mechanism of Antioxidant Action in Vitro. In B. J. F. Hudson (Ed.), *Food Antioxidants* (pp. 1–18). Springer Netherlands. [https://doi.org/10.1007/978-94-009-0753-9\\_1](https://doi.org/10.1007/978-94-009-0753-9_1)
- Grassia, M., Messina, M. C., Marconi, E., Demirkol, Ö. Şakiyan, Erdoğan, F., Sarghini, F., Cinquanta, L., Corona, O., & Planeta, D. (2021). Microencapsulation of Phenolic Extracts from Cocoa Shells to Enrich Chocolate Bars. *Plant Foods for Human Nutrition*, 76(4), 449–457. <https://doi.org/10.1007/s11130-021-00917-4>
- Hadnađev, M., Kalić, M., Krstonošić, V., Jovanović-Lješković, N., Erceg, T., Škrobot, D., & Dapčević-Hadnađev, T. (2023). Fortification of chocolate with microencapsulated fish oil: Effect of protein wall material on physicochemical properties of microcapsules and chocolate matrix. *Food Chemistry: X*, 17, 100583. <https://doi.org/10.1016/j.fochx.2023.100583>
- He, Z., Nam, S., & Klasson, K. T. (2023). Oxidative Stability of Cottonseed Butter Products under Accelerated Storage Conditions. *Molecules*, 28(4), 1599. <https://doi.org/10.3390/molecules28041599>
- Heriyanti, H., Putri, Y. E., Irawan, H., Raza'i, T. S., Tarigan, I. L., Kartika, E., Ichwan, B., & Latief, M. (2024). Encapsulation of Ethanol Extract Perepat Leaves (*Sonneratia alba*) with Maltodextrin Coating as an Antioxidant Functional Food Candidate. *Indonesian Food Science and Technology Journal*, 7(2), 193–201. <https://doi.org/10.22437/iftj.v7i2.34013>
- Huang, J., Hu, Z., Chin, Y., Pei, Z., Yao, Q., Chen, J., Li, D., & Hu, Y. (2023). Improved thermal stability of roselle anthocyanin by co-pigmented with oxalic acid: Preparation, characterization and enhancement mechanism. *Food Chemistry*, 410, 135407. <https://doi.org/10.1016/j.foodchem.2023.135407>
- Importance of rheological properties in enrobing efficiency of dark chocolate: Application in wafer products.* (n.d.).

- Indiarto, R., Herwanto, J. A., Filianty, F., Lembong, E., Subroto, E., & Muhammad, D. R. A. (2024). Total phenolic and flavonoid content, antioxidant activity and characteristics of a chocolate beverage incorporated with encapsulated clove bud extract. *CyTA - Journal of Food*, 22(1), 2329144. <https://doi.org/10.1080/19476337.2024.2329144>
- Ismail, A., Bannenberg, G., Rice, H., Schutt, E., & MacKay, D. (2016). Oxidation in EPA- and DHA-rich oils: An overview. *Lipid Technology*, 28, n/a-n/a. <https://doi.org/10.1002/lite.201600013>
- Jabeur, I., Pereira, E., Barros, L., Calhelha, R. C., Soković, M., Oliveira, M. B. P. P., & Ferreira, I. C. F. R. (2017). *Hibiscus sabdariffa* L. as a source of nutrients, bioactive compounds and colouring agents. *Food Research International*, 100, 717–723. <https://doi.org/10.1016/j.foodres.2017.07.073>
- Jin, J., Shen, L., Ye, X., Wang, J., Hartel, R. W., & Zhao, L. (2024). Effects of surface modification of sucrose particles on chocolate morphology and fat bloom during storage. *Journal of Food Engineering*, 379, 112125. <https://doi.org/10.1016/j.jfoodeng.2024.112125>
- Julizan, N., Ishmayana, S., Zainuddin, A., Van Hung, P., & Kurnia, D. (2023). Potential of *Syzygium polyanthum* as Natural Food Preservative: A Review. *Foods*, 12(12), 2275. <https://doi.org/10.3390/foods12122275>
- Kebede, B. H., Them, R. L., & Mengistu, B. A. (2025). Effects of extraction solvents on phenolic contents, in vitro antioxidant, and antimicrobial activities of roselle (*Hibiscus sabdariffa* L.) Calyx. *Food Chemistry Advances*, 9, 101119. <https://doi.org/10.1016/j.focha.2025.101119>
- Konar, N., Palabiyik, I., Karimidastjerd, A., & Said Toker, O. (2024). Chocolate microstructure: A comprehensive review. *Food Research International*, 196, 115091. <https://doi.org/10.1016/j.foodres.2024.115091>
- Lai, Y.-J., Chiang, Y.-C., Jhan, Y.-S., Song, T.-Y., & Cheng, M.-C. (2024). Extraction Effects on Roselle Functionalities: Antioxidant, Antiglycation, and Antibacterial Capacities. *Foods*, 13(14), 2172. <https://doi.org/10.3390/foods13142172>

- Lapčiková, B., Lapčík, L., Salek, R., Valenta, T., Lorencová, E., & Vašina, M. (2022). Physical characterization of the milk chocolate using whey powder. *LWT*, 154, 112669. <https://doi.org/10.1016/j.lwt.2021.112669>
- Larasati, I. D., Simorangkir, C. B., Massita, N. A. B., Nabila, P. R., & Setyaningsih, W. (2026). *Roselle (Hibiscus sabdariffa L.) Phenolic Profile and Lipid Oxidation Inhibition in a Cocoa Butter Model System: Impact of Extraction Method*. SSRN. <https://doi.org/10.2139/ssrn.6299722>
- Latimer, G. W. (Ed.). (2023). *Official Methods of Analysis of AOAC INTERNATIONAL* (22nd ed.). Oxford University Press. <https://doi.org/10.1093/9780197610145.001.0001>
- Lindon, J. C., Tranter, G. E., & Koppenaal, D. W. (Eds.). (2017). *Encyclopedia of spectroscopy and spectrometry* (Third edition). Elsevier/AP, Academic Press is an imprint of Elsevier.
- Luvonga, W. A., Njoroge, M. S., Makokha, A., & Ngunjiri, P. W. (n.d.). *CHEMICAL CHARACTERISATION OF HIBISCUS SABDARIFFA (ROSELLE) CALYCES AND EVALUATION OF ITS FUNCTIONAL POTENTIAL IN THE FOOD INDUSTRY*.
- Lynch, J. M., Corniuk, R. N., Brignac, K. C., Jung, M. R., Sellona, K., Marchiani, J., & Weatherford, W. (2024). Differential scanning calorimetry (DSC): An important tool for polymer identification and characterization of plastic marine debris. *Environmental Pollution*, 346, 123607. <https://doi.org/10.1016/j.envpol.2024.123607>
- Mardiah, F. R. Z. (2015). PERUBAHAN KANDUNGAN KIMIA SARI ROSELA MERAH DAN UNGU (*Hibiscus sabdariffa* L.) HASIL PENGERINGAN MENGGUNAKAN CABINET DRYER DAN FLUIDIZED BED DRYER. *Jurnal Teknologi Industri Pertanian*, 25(1). <https://journal.ipb.ac.id/jurnaltin/article/view/9699>
- Marikkar, N., Ulpathakumbura, S., & Lai, O.-M. (2025). Understanding Lipid Oxidation Influences in Halalan Toyoyiban Products. In H. B. Jaiyeoba & N. Marikkar, *Halalan Toyoyiban Lipids Processing and Utilization* (pp. 61–69). AIJR Publisher. <https://doi.org/10.21467/books.181.6>



- Millinia, B. L., Mashithah, D., Nawatila, R., & Kartini, K. (2024). Microencapsulation of roselle (*Hibiscus sabdariffa* L.) anthocyanins: Effects of maltodextrin and trehalose matrix on selected physicochemical properties and antioxidant activities of spray-dried powder. *Future Foods*, 9, 100300. <https://doi.org/10.1016/j.fufo.2024.100300>
- Missa, S., Bukit, M., & Louk, A. C. (2018). PENENTUAN MORFOLOGI PERMUKAAN, SIFAT FISIS DAN MEKANIK BERDASARKAN PRESENTASE KOMPOSISI BAHAN CAMPURAN BATAKO. *Jurnal Fisika : Fisika Sains dan Aplikasinya*, 3(1), 59–68. <https://doi.org/10.35508/fisa.v3i1.596>
- Nain, C. W., Mignolet, E., Herent, M.-F., Quetin-Leclercq, J., Debier, C., Page, M. M., & Larondelle, Y. (2022). The Catechins Profile of Green Tea Extracts Affects the Antioxidant Activity and Degradation of Catechins in DHA-Rich Oil. *Antioxidants*, 11(9), 1844. <https://doi.org/10.3390/antiox11091844>
- Nirmal, N., Khanashyam, A., Mundanat, A., Shah, K., Babu, K., Thorakkattu, P., Al-Asmari, F., & Pandiselvam, R. (2023). Valorization of Fruit Waste for Bioactive Compounds and Their Applications in the Food Industry. *Foods*, 12(3), 556. <https://doi.org/10.3390/foods12030556>
- Nooshkam, M., Varidi, M., & Bashash, M. (2019). The Maillard reaction products as food-born antioxidant and antibrowning agents in model and real food systems. *Food Chemistry*, 275, 644–660. <https://doi.org/10.1016/j.foodchem.2018.09.083>
- Ostrowska-Ligęza, E., Marzec, A., Górka, 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, 60–69. <https://doi.org/10.1016/j.tca.2018.11.005>
- Ostrowska-Ligęza, E., Wirkowska-Wojdyła, M., Brzezińska, R., Piasecka, I., Synowiec, A., Gondek, E., & Górka, A. (2024a). Application of Differential Scanning Calorimetry and Thermogravimetry for Thermal Analysis of Dark Chocolates. *Applied Sciences*, 14(20), 9502. <https://doi.org/10.3390/app14209502>
- Ostrowska-Ligęza, E., Wirkowska-Wojdyła, M., Brzezińska, R., Piasecka, I., Synowiec, A., Gondek, E., & Górka, A. (2024b). Application of Differential Scanning Calorimetry and Thermogravimetry for Thermal Analysis of Dark Chocolates. *Applied Sciences*, 14(20), 9502. <https://doi.org/10.3390/app14209502>

- Paulo, F., Tavares, L., & Santos, L. (2023). Olive Mill Pomace Extract Loaded Ethylcellulose Microparticles as a Delivery System to Improve Olive Oils Oxidative Stability. *Resources*, 12(1), 6. <https://doi.org/10.3390/resources12010006>
- Pulungan, M. H., Sucipto, S., & Sarsiyani, S. (2016). Penentuan Umur Simpan Pia Apel dengan Metode ASLT (Studi Kasus Di UMKM Permata Agro Mandiri Kota Batu). *Industria: Jurnal Teknologi dan Manajemen Agroindustri*, 5(2), 61–66. <https://doi.org/10.21776/ub.industria.2016.005.02.2>
- Quispe-Sanchez, L., Mestanza, M., Oliva-Cruz, M., Rimarachín, N., Caetano, A. C., Chuquizuta, T., Goñas, M., Ambler Gill, E. R., & Chavez, S. G. (2023). Oxidative stability and physicochemical changes of dark chocolates with essential oils addition. *Heliyon*, 9(7), e18139. <https://doi.org/10.1016/j.heliyon.2023.e18139>
- Rajagukguk, Y. V., Islam, M., Grygier, A., Siger, A., Rudzińska, M., & Tomaszewska-Gras, J. (2024). Physicochemical characteristics of cold-pressed blackcurrant-, strawberry-, and raspberry seed oils during storage and its influence on thermo-oxidative stability. *NFS Journal*, 37, 100195. <https://doi.org/10.1016/j.nfs.2024.100195>
- Ramadhan, F., Muchtadi, T., & Subroto, E. (2023). Kajian Karakteristik Produk Chocolate Compound dengan Penambahan Inulin (Fat Replacer) dan Stevia (Sweetener). *Syntax Literate ; Jurnal Ilmiah Indonesia*, 8(5), 3198–3216. <https://doi.org/10.36418/syntax-literate.v8i5.11805>
- Rojo-Poveda, O., Barbosa-Pereira, L., Zeppa, G., & Stévigny, C. (2020). Cocoa Bean Shell—A By-Product with Nutritional Properties and Biofunctional Potential. *Nutrients*, 12(4), 1123. <https://doi.org/10.3390/nu12041123>
- Samanta, S., Sarkar, T., Chakraborty, R., Rebezov, M., Shariati, M. A., Thiruvengadam, M., & Rengasamy, K. R. R. (2022). Dark chocolate: An overview of its biological activity, processing, and fortification approaches. *Current Research in Food Science*, 5, 1916–1943. <https://doi.org/10.1016/j.crfs.2022.10.017>
- Sapian, S., Ibrahim Mze, A. A., Jubaidi, F. F., Mohd Nor, N. A., Taib, I. S., Abd Hamid, Z., Zainalabidin, S., Mohamad Anuar, N. N., Katas, H., Latip, J., Jalil, J., Abu Bakar, N. F., & Budin, S. B. (2023). Therapeutic Potential of Hibiscus sabdariffa



- Linn. In Attenuating Cardiovascular Risk Factors. *Pharmaceuticals*, 16(6), 807.  
<https://doi.org/10.3390/ph16060807>
- Shen, L., Pang, S., Zhong, M., Sun, Y., Qayum, A., Liu, Y., Rashid, A., Xu, B., Liang, Q., Ma, H., & Ren, X. (2023). A comprehensive review of ultrasonic assisted extraction (UAE) for bioactive components: Principles, advantages, equipment, and combined technologies. *Ultrasonics Sonochemistry*, 101, 106646.  
<https://doi.org/10.1016/j.ultsonch.2023.106646>
- Simoes, S., Lelaj, E., & Rousseau, D. (2021). The presence of crystalline sugar limits the influence of emulsifiers on cocoa butter crystallization. *Food Chemistry*, 346, 128848. <https://doi.org/10.1016/j.foodchem.2020.128848>
- Siregar, T. M., & Miarsa, D. C. (2024). Evaluating the Antioxidant Activity and Stability of Pigmented Rice Extract. *Jurnal Teknik Pertanian Lampung (Journal of Agricultural Engineering)*, 13(4), 1036–1050. <https://doi.org/10.23960/jtep-1.v13i4.1036-1050>
- Talbot, G. (2016). The Stability and Shelf Life of Fats and Oils. In *The Stability and Shelf Life of Food* (pp. 461–503). Elsevier. <https://doi.org/10.1016/B978-0-08-100435-7.00016-2>
- Taormina, P. J. (2021). Purposes and Principles of Shelf Life Determination. In P. J. Taormina & M. D. Hardin (Eds.), *Food Safety and Quality-Based Shelf Life of Perishable Foods* (pp. 1–26). Springer International Publishing.  
[https://doi.org/10.1007/978-3-030-54375-4\\_1](https://doi.org/10.1007/978-3-030-54375-4_1)
- Taoukis, P. S., & Giannakourou, M. C. (2004). Temperature and food stability: Analysis and control. In *Understanding and Measuring the Shelf-Life of Food* (pp. 42–68). Elsevier. <https://doi.org/10.1533/9781855739024.1.42>
- Tolve, R., Tchuénbou-Magaia, F. L., Sportiello, L., Bianchi, F., Radecka, I., & Favati, F. (2022). Shelf-Life Prediction and Thermodynamic Properties of No Added Sugar Chocolate Spread Fortified with Multiple Micronutrients. *Foods*, 11(15), 2358.  
<https://doi.org/10.3390/foods11152358>
- Torregrossa, F., Cinquanta, L., Albanese, D., Cuomo, F., Librici, C., Lo Meo, P., & Conte, P. (2024). Vegan and sugar-substituted chocolates: Assessing physicochemical

- characteristics by NMR relaxometry, rheology, and DSC. *European Food Research and Technology*, 250(4), 1219–1228. <https://doi.org/10.1007/s00217-023-04457-w>
- Triyastuti, M. S., & Anwar, N. (2022). BIOACTIVE COMPOUNDS FROM PURPLE ROSELLE CALYX (HIBISCUS SABDARIFFA L.) EXTRACT USING MULTISTAGE COUNTERCURRENT METHOD. *Media Gizi Indonesia*, 17(1), 1–10. <https://doi.org/10.20473/mgi.v17i1.1-10>
- Trushenski, J. T., & Lochmann, R. T. (2009). Potential, Implications and Solutions Regarding the Use of Rendered Animal Fats in Aquafeeds. *American Journal of Animal and Veterinary Sciences*, 4(4), 108–128. <https://doi.org/10.3844/ajavsp.2009.108.128>
- Utami, R. R. (2018). ANTIOKSIDAN BIJI KAKAO: PENGARUH FERMENTASI DAN PENYANGRAIAN TERHADAP PERUBAHANNYA (ULASAN). *Jurnal Industri Hasil Perkebunan*, 13(2), 75. <https://doi.org/10.33104/jihp.v13i2.4062>
- View of Antioxidant, Antibacterial, and Antidiabetic Activities of Roselle (Hibiscus sabdariffa) Extracts.* (n.d.). Retrieved March 15, 2026, from <https://ejournal.brin.go.id/annales/article/view/7409/5637>
- Watanabe, S., Yoshikawa, S., & Sato, K. (2021). Formation and properties of dark chocolate prepared using fat mixtures of cocoa butter and symmetric/asymmetric stearic-oleic mixed-acid triacylglycerols: Impact of molecular compound crystals. *Food Chemistry*, 339, 127808. <https://doi.org/10.1016/j.foodchem.2020.127808>
- Wei, J., Shang, J., Gao, Y., Yuan, F., & Mao, L. (2025). Insights into the Stability and Lipid Oxidation of Water-in-Oil High Internal Phase Emulsions: Roles of the Concentration of the Emulsifier, Aqueous Phase, and NaCl. *Foods*, 14(9), 1606. <https://doi.org/10.3390/foods14091606>
- Xu, D.-P., Li, Y., Meng, X., Zhou, T., Zhou, Y., Zheng, J., Zhang, J.-J., & Li, H.-B. (2017). Natural Antioxidants in Foods and Medicinal Plants: Extraction, Assessment and Resources. *International Journal of Molecular Sciences*, 18(1), 96. <https://doi.org/10.3390/ijms18010096>
- Ye, L., Harris, E., Budge, S. M., & Sullivan Ritter, J. (2020). Flavors' Decreasing Contribution to p-Anisidine Value over Shelf Life May Invalidate the Current

- Recommended Protocol for Flavored Fish Oils. *Journal of the American Oil Chemists' Society*, 97(12), 1335–1341. <https://doi.org/10.1002/aocs.12435>
- Yenipazar, H., & Şahin-Yeşilçubuk, N. (2023). Effect of packaging and encapsulation on the oxidative and sensory stability of omega-3 supplements. *Food Science & Nutrition*, 11(3), 1426–1440. <https://doi.org/10.1002/fsn3.3182>
- Yulianto, A. (2022). KUALITAS MINYAK IKAN DARI HASIL SAMPING, DAN PRODUK (SOFTGEL) MINYAK IKAN KOMERSIAL. *Jurnal Harpodon Borneo*, 15(2), 82–92. <https://doi.org/10.35334/harpodon.v15i2.2125>
- Žabčíková, S., & Červenka, L. (2015). Modified carbon paste electrode as a tool for the evaluation of oxidative stability of rapeseed oil. *Potravinárstvo Slovak Journal of Food Sciences*, 9(1), 347–351. <https://doi.org/10.5219/432>
- Zarić, D. B., Rakin, M. B., Bulatović, M. Lj., Dimitrijević, I. D., Ostojin, V. D., Lončarević, I. S., & Stožinić, M. V. (2024). Rheological, Thermal, and Textural Characteristics of White, Milk, Dark, and Ruby Chocolate. *Processes*, 12(12), 2810. <https://doi.org/10.3390/pr12122810>
- 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>