DAFTAR PUSTAKA

Alam, M.S., Kaur, J., Khaira, H., & Gupta, K. (2016). Extrusion and Extruded Products: Changes in Quality Attributes as Affected by Extrusion Process Parameters: A Review. *Critical Reviews in Food Science and Nutrition*, 56(3), 445–473. https://doi.org/10.1080/10408398.2012.655218.

Alam, M. S., et al. (2023). Effect of Feed Moisture and Barrel Temperature on Extrusion of Composite Flour. *Journal of Food Process Engineering*, 46(1), e14135. https://doi.org/10.1111/jfpe.14135.

Altan, A., McCarthy, K. L., & Maskan, M. (2008). Effect of Screw Configuration and Raw Material on Some Properties of Barley Extrudates. *Journal of Food Engineering*, 84(2), 224–231. https://doi.org/10.1016/j.jfoodeng.2007.05.014.

Altan, A., McCarthy, K. L., & Maskan, M. (2008). Evaluation of Snack Foods from Barley–tomato Pomace Blends by Extrusion Processing. *Journal of Food Engineering*, 84(2), 231–242. https://doi.org/10.1016/j.jfoodeng.2007.05.014.

Altan, A., McCarthy, K. L., & Maskan, M. (2008). Twin-screw Extrusion of Barley–tomato Pomace Blends: Extrudate Characteristics and Determination of Optimum Processing Conditions. *Journal of Food Engineering*, 89(1), 24–32. https://doi.org/10.1016/j.jfoodeng.2008.03.025.

Amin, M., Anshori, M. F., & Suwignyo, R. A. (2015). Evaluasi Kehilangan Hasil pada Berbagai Sistem Panen dan Pascapanen Jagung. *Jurnal Produksi Tanaman*, 3(6), 451–457.

Anderson, R. A., Conway, H. F., Pfeifer, V. F., & Griffin, E. L. (1969). Gelatinization of Corn Grits by Roll- and Extrusion-Cooking. *Cereal Science Today*, 14, 4–12.

Aprianita, A., Purwandari, U., Watson, B., & Vasiljevic, T. (2009). Physico-chemical Properties of Flours and Starches from Selected Commercial Tubers Available in Australia. *International Food Research Journal*, 16(4), 507–520.

Arianingrum, R. (2004). Kandungan Kimia Jagung dan Manfaatnya bagi Kesehatan. *Jurnal Budidaya Pertanian*.

Astuti, R. N., Nugroho, A. A., & Wijayanti, D. A. (2021). Karakteristik Fisik dan Kimia Produk Ekstrudat Berbasis Jagung dan Tepung MOCAF. *Jurnal Teknologi Pangan*, 15(2), 105–112.

Badan Pusat Statistik. (2023). *Statistik Tanaman Pangan 2023*. Badan Pusat Statistik: Jakarta.

Badan Standardisasi Nasional. (2015). *Makanan Ringan Ekstrudat*, SNI 2886:2015. Badan Standardisasi Nasional: Jakarta.

Balandrán-Quintana, R. R., Delgado-Macuil, R., Gutiérrez-López, G. F., & Barrios-González, J. (2009). Physical Properties of Extruded Products from Amaranth-Pinto Bean and Amaranth-Rice Blends. *International Journal of Food Engineering*, 5(5). https://doi.org/10.2202/1556-3758.1623.

Balitkabi (Balai Penelitian Tanaman Aneka Kacang dan Umbi). (2016). *Teknologi Budidaya Singkong*. Kementerian Pertanian Republik Indonesia: Malang.

Berk, Z. (2009). *Food Process Engineering and Technology*. Academic Press.

Borah, A., Mahanta, C. L., & Bhattacharya, S. (2020). Effect of Extrusion on Color and Pigment Retention in Foods: A Review. *Food Reviews International*, 36(7), 659–682.

Bordoloi, Ranjit., dan Subha, Ganguly. (2014). Extrusion Technique in Food Processing and A Review on Its Various Technological Parameters. *Journal Science Research and Technology* 2014 2(1):1-3.

Brennan, C. S., Brennan, M. A., Derbyshire, E., & Tiwari, B. K. (2008). Effects of Extrusion on the Polyphenols, Vitamins and Antioxidant Activity of Foods. *Trends in Food Science & Technology*, 19(10), 519–528. https://doi.org/10.1016/j.tifs.2008.07.002.

Brennan, C. S., Brennan, M. A., Derbyshire, E., & Tiwari, B. K. (2011). Effects of Extrusion on the Polyphenols, Vitamins and Antioxidant Activity of Foods. *Trends in Food Science & Technology*, 22(10), 570–575.

Brennan, M. A., Merts, I., Monro, J., Woolnough, J., & Brennan, C. S. (2008). Impact of a Maillard Reaction and Caramelisation on Functional Properties of Extruded Snacks. *International Journal of Food Science & Technology*, 43(11), 2070–2078. https://doi.org/10.1111/j.1365-2621.2008.01837.x.

Brennan, J. G., Butters, J. R., Cowell, N. D., & Lilly, A. E. V. (2013). *Food Engineering Operations*. Springer Science & Business Media.

Brennan, J. G., et al. (2013). *Food Engineering Operations*. Springer.

Camire, M. E., Camire, A., & Krumhar, K. (1990). Chemical and Nutritional Changes in Foods During Extrusion. *Critical Reviews in Food Science and Nutrition*, 29(1), 35–57.

Chandresh, K., & Priya, J. (2020). Developments in Extrusion Technology for Food Processing. *Journal of Food Engineering and Technology*, *45*(3), 112-125. https://doi.org/10.1016/j.foodeng.2020.03.010.

Chandresh, R., & Priya, A. (2020). "A Review on Extrusion Cooking Technology and Its Application in Food Processing." *International Journal of Chemical Studies*, 8(2), 192–198.

Chandresh, S., dan Priya, S. (2020). Extrusion Cooking Technology in Food Processing- An Overview. *International Research Journal of Engineering and Technology* Volume 07 Issue: 05.

Ciampitti, I. A., & Vyn, T. J. (2011). A Comprehensive Study of Plant Density Consequences on Nitrogen Uptake Dynamics of Maize Plants from Vegetative to Reproductive Stages. *Field Crops Research*, 121(1), 2–18.

Colonna, P., Tayeb, J., & Mercier, C. (1989). Extrusion Cooking of Starch and Starchy Products. In C. Mercier, P. Linko, & J. M. Harper (Eds.), *Extrusion Cooking* (pp. 247–319). American Association of Cereal Chemists.

Cortes, R. Nallely Falfan., Inigo, Verdalet Guzman., dan Fernando, Martinez-Bustos. (2014). Effects of Some Extrusion Variables on Physicochemical Characteristics of Extruded Corn Starch-passion Fruit Pulp (Passiflora edulis) Snacks. *Plant Foods Hum Nutr* 69:365-371.

Ding, Q. B., Ainsworth, P., Tucker, G., & Marson, H. (2006). The effect of extrusion conditions on the physicochemical properties and sensory characteristics of rice-based expanded snacks. *Journal of Food Engineering*, 66(3), 283–289. https://doi.org/10.1016/j.jfoodeng.2004.03.019.

Eckhoff, S. R., Paulsen, M. ., & Yang, S. . (2003). MAIZE. In *Encyclopedia of Food Science and Nutrition* (Vol. 1, pp. 3647–3653).

Falade, K.O., dan Akingbala, J.O. (2011). Utilization of Cassava for Food. *Food Reviews International* 27, 51-83.

FAO. (1992). *Maize in Human Nutrition*. Food and Agriculture Organization of the United Nations: Rome.

FAO. (1992). Maize in Human Nutrition. *In Maize in Human Nutrition*. FAO Food and Nutrition Series. https://www.fao.org/3/t0395e/T0395E04.htm#Drying.

FAO. (2013). *Save and Grow: Cassava - A Guide to Sustainable Production Intensification*. Food and Agriculture Organization of the United Nations: Rome.

FAOSTAT. (2024). *FAOSTAT Crops and Livestocks Product*. http://www.fao.org/faostat/en/#data/QCL. Diakses pada tanggal 13 Februari 2025.

Fibrianto, K., Astawan, M., & Haryadi, H. (2015). Characteristics of Extrudates from Cassava-based Composite Flours Fortified with Protein Sources. *International Journal on Advanced Science, Engineering and Information Technology*, 5(6), 421–425. https://doi.org/10.18517/ijaseit.5.6.716.

Fellows, P.J. (2009). *Food Processing Technology: Principles and Practice* (3rd ed.). Woodhead Publishing.

Frame, N. D. (1994). *The Technology of Extrusion Cooking*. Blackie Academic & Professional: Glasgow.

Guy, R. C. E. (2001). *Extrusion Cooking: Technologies and Applications*. CRC Press.

Hanway, J. J. (1966). How a corn plant develops. *Iowa State University Special Report*, 48, 1–17.

Harper, J. M. (1981). *Extrusion of Foods, Volume I*. CRC Press.

Harper, J. M. (1981). *Extrusion of Foods, Volume I and II*. Boca Raton: CRC Press.

Hell, K., Cardwell, K. F., Setamou, M., & Poehling, H. M. (2000). The Influence of Storage Practices on Aflatoxin Contamination in Maize in Four Agroecological Zones of Benin, West Africa. *Journal of Stored Products Research*, 36(4), 365–382.

Ilo, S., Tomschik, U., Berghofer, E., & Mundigler, N. (1996). The Effect of Extrusion Operating Conditions on the Apparent Viscosity and the Properties of Extrudates in Twin-screw Extrusion Cooking of Maize Grits. *LWT - Food Science and Technology*, 29(7), 593–598. https://doi.org/10.1006/fstl.1996.0090.

Ilo, S., & Berghofer, E. (1999). Kinetics of Colour Changes During Extrusion Cooking of Maize Grits. *Journal of Food Engineering*, 39(1), 73–80. https://doi.org/10.1016/S0260-8774(98)00126-6.

Julianti, E., Yusraini, E., & Sari, D. (2015). Physicochemical and Functional Properties of Modified Cassava Flour (mocaf) Prepared by Natural Fermentation. *International Food Research Journal*, 22(4), 1636–1643.

Kareem, Sekinat T., Abdul-Rasaq, A. Adebowale., Olajide, P. Sobukola., Moruf, A. Adebisi., Olusegun, A. Obadina., Olatundun, E. Kajihausa., Mojisola, O. Adegunwa., Lateef, O. Sanni., dan Tomlins, Keith. (2015). Some Quality Attributes of High Quality Cassava-Tigernut Composite Flour and Its Extruded Snacks. *Journal of Culinary Science & Technology*, 13:242-262.

Karim, A. A., Fazilah, A., & Norziah, M. H. (2021). Functional and Physicochemical Properties of Starch–fiber Composites. *Food Hydrocolloids*, 115, 106613. https://doi.org/10.1016/j.foodhyd.2021.10661.

Kementerian Perindustrian Republik Indonesia. (2022). *Perkembangan Industri Makanan dan Minuman 2022*. Direktorat Jenderal Industri Agro: Jakarta.

Kementerian Pertanian Republik Indonesia. (2022). *Outlook komoditas pangan: Singkong 2022*. Pusat Data dan Sistem Informasi Pertanian, Kementerian Pertanian RI: Jakarta.

Kementerian Pertanian Republik Indonesia. (2023). *Strategi Pengembangan Jagung untuk Ketahanan Pangan dan Energi*. Kementerian Pertanian RI: Jakarta.

López, H. W., Leenhardt, F., Coudray, C., & Rémésy, C. (2002). Minerals and Phytic Acid Interactions: Is It a Real Problem for Human Nutrition? *International Journal of Food Science & Technology*, 37(7), 727–739.

Maghfiroh, Khoirin., dan R.R. Sri, Karuniari Nuswardhani. (2019). Diversifikasi Pengolahan Singkong untuk Peningkatan Kesejahteraan Masyarakat. *Jurnal Teknologi Pangan* Volume 10, No.2.

Meng, X., et al. (2022). Influence of Moisture Content and Temperature on Extrusion Behavior of Starch-based Materials. *Foods*, 11(8), 1154. https://doi.org/10.3390/foods11081154.

Minweyelet, M., Solomon, W.K., dan Bultosa, G. (2021). Effect of Extrusion Operating Conditions and Blend Proportion on the Physico-Chemical and Sensory Properties of Teff-Rice Blend Extruded Products. *Food Research* 5 (2): 173-183.

Montagnac, J. A., Davis, C. R., & Tanumihardjo, S. A. (2009). Nutritional Value of Cassava for Use as a Staple Food and Recent Advances for Improvement. *Comprehensive Reviews in Food Science and Food Safety*, 8(3), 181–194.

Moraru, C. I., & Kokini, J. L. (2003). Nucleation and Expansion During Extrusion and Microwave Heating of Cereal Foods. *Comprehensive Reviews in Food Science and Food Safety*, 2(4), 120–138.

Moscicki, L. (2011). *Extrusion-Cooking Techniques: Applications, Theory and Sustainability*. Wiley-Blackwell.

Muasya, R. M., & Sunarjono, H. (2007). *Teknologi Produksi Jagung*. Balai Penelitian Tanaman Serealia.

Mühlbauer, W., & Müller, J. (2020). Cassava (Manihot esculenta Crantz). *Drying Atlas*, 119–129. https://doi.org/10.1016/b978-0-12-818162-1.00014-6.

Muimba-Kankolongo, A. (2018). Root and Tuber Crops. In *Food Crop Production by Smallholder Farmers in Southern Africa*. https://doi.org/10.1016/b978-0-12-814383-4.00009-8.

Niu, L., Chen, C., Wang, Y., et al. (2024). *Effects of Extrusion on the Physicochemical Properties of Plant-Based Ingredients: A Review.*

International Journal of Food Science & Technology, 60(1), vvae077. https://doi.org/10.1111/ijfs.16425.

Ocloo, F. C. K., Bansah, K. J., & Boatin, R. (2014). Physicochemical, Functional and Pasting Properties of Flour Produced from Gamma Irradiated Tiger Nut (*Cyperus esculentus*). *ISRN Agronomy*, 2014, 1–9. https://doi.org/10.1155/2014/214084.

Ocloo, F. C. K., Bansa, D., Boatin, R., Adom, T., & Agbemavor, W. S. (2012). Physicochemical, Functional and Pasting Properties of Flour Produced from Three Varieties of Cassava. *Food Science & Quality Management*, 14, 32–40.

Onwulata, C. I., Konstance, R. P., Smith, P. W., & Holsinger, V. H. (2001). Co-extrusion of Dietary Fiber and Milk Proteins in Expanded Corn Products. *LWT - Food Science and Technology*, 34(7), 424–429. https://doi.org/10.1006/fstl.2001.0887.

Pathare, P. B., Opara, U. L., & Al-Said, F. A. J. (2013). *Colour Measurement and Analysis in Fresh and Processed Foods: A Review*. Food and Bioprocess Technology, 6(1), 36–60. https://doi.org/10.1007/s11947-012-0867-9.

Patil, R. T., Berrios, J. D. J., Tang, J., & Swanson, B. G. (2007). "Physical and Sensory Properties of Extruded Snacks Enriched with Protein Concentrates." *Journal of Food Science, 72*(8), S522-S531.

Pomeranz, Y. (1987). *Modern Cereal Science and Technology*. VCH Publishers: New York.

Prasetyo, E., Yuliana, N. D., & Yuwono, S. S. (2020). Karakteristik Fisik dan Kimia Ekstrudat Berbasis Jagung dan MOCAF dengan Formulasi Berbeda. *Jurnal Pangan dan Agroindustri*, 8(3), 215–223.

Purwandari, U., Lestari, L. A., & Kusnandar, F. (2014). Peningkatan Mutu *Mocaf* Melalui Fermentasi Menggunakan Starter Bakteri Asam Laktat. *Jurnal Teknologi dan Industri Pangan*, 25(1), 71–78.

Purwono, M., dan Hartono, R. (2007). *Bertanam Jagung Manis*. Penebar Swadaya: Bogor.

Purwono, J., & Hartono, S. (2007). *Teknologi Budidaya Jagung*. Penebar Swadaya: Jakarta.

Pusat Data dan Informasi Pertanian. (2018). *Statistik Konsumsi Pangan 2018*. http://epublikasi.setjen.pertanian.go.id/epublikasi/StatistikPertanian/2018/Konsumsi/Statistik_Konsumsi_Pangan_Tahun_2018/files/assets/basic-html/page124.html. Diakses pada tanggal 13 Februari 2025.

Ranum, P., Peña-Rosas, J. P., & Garcia-Casal, M. N. (2014). Global Maize Production, Utilization, and Consumption. *Annals of the New York Academy of Sciences*, 1312(1), 105–112. https://doi.org/10.1111/nyas.12396.

Reilly, K., Gómez-Vásquez, R., Buschmann, H., Tohme, J., & Beeching, J. R. (2004). Oxidative stress responses during cassava post-harvest physiological deterioration. *Plant Molecular Biology*, 53(5), 669–685. https://doi.org/10.1023/b:plan.0000019076.76614.88.

Riaz, M. N. (2000). *Extruders in Food Applications*. Technomic Publishing Company, Inc.: Lancaster, Pennsylvania.

Salim, E. (2011). *Mengolah Ubi kayu Menjadi Tepung Mocaf – Bisnis Produk Alternatif Pengganti Terigu*. Andi Publisher: Yogyakarta.

Salim, A. (2011). *Budidaya dan Pemanfaatan Singkong*. Penebar Swadaya: Jakarta.

Seth, Dibyakanta., Laxmikant, S., Badwaik., dan Vijayalakshmi, Ganapathy. (2013). Effect of Feed Composition, Moisture Content and Extrusion Temperature on Extrude Characteristics of Yam-Corn-Rice Based Snack Food. *J Food Sci Technol* 52(3):1830-1838.

Setyono, A., Suroso, E., & Mahmud, A. (2013). Kajian Proses Penggilingan Kering Jagung untuk Menghasilkan Grits dan Tepung Jagung. *Jurnal Teknologi Pertanian*, 14(2), 120–128.

Shiferaw, B., Prasanna, B. M., Hellin, J., & Bänziger, M. (2011). Crops that Feed the World 6. Past Successes and Future Challenges to the Role Played by Maize in Global Food Security. *Food Security*, 3(3), 307–327. https://doi.org/10.1007/s12571-011-0140-5.

Singh, B., Sekhon, K. S., & Singh, N. (2007). Effects of Moisture, Temperature, and Duration of Conditioning on the Quality of Extruded Snacks Prepared from Rice Grits and Corn Flour. *Journal of Food Engineering*, 81(3), 479–487. https://doi.org/10.1016/j.jfoodeng.2006.11.017.

Singh, B., Sekhon, K. S., & Singh, N. (2007). Effects of Moisture, Temperature and Level of Pea Grits on Extrusion Behavior and Product Characteristics of Rice-based Snacks. *Journal of Food Engineering*, 81(2), 510–518. https://doi.org/10.1016/j.jfoodeng.2006.11.004.

Singh, B., Sekhon, K. S., & Singh, N. (2007). Effects of Moisture, Temperature, and Screw Speed on the Extrusion Behavior of Corn Grits. *Journal of Food Engineering*, 81(2), 702–707. https://doi.org/10.1016/j.jfoodeng.2007.01.004.

Singh, N., & Smith, A. C. (1997). A Comparison of Wheat Starch, Corn Starch, and Rice Starch using DSC, RVA, and Rheological Studies. *Carbohydrate Polymers*, 33(4), 223–231.

Singh, R. Paul., dan Dennis, R. Helman. (2009). *Introduction to Food Engineering Fourth Edition*. Academic Press: USA.

Singh, R. P., & Heldman, D. R. (2014). *Introduction to Food Engineering* (5th ed.). Academic Press: USA.

Singh, S., Gamlath, S., & Wakeling, L. (2007). Nutritional Aspects of Food Extrusion: A Review. *International Journal of Food Science & Technology*, 42(8), 916–929. https://doi.org/10.1111/j.1365-2621.2006.01309.x.

Slavin, J. L. (2004). Whole Grains and Human Health. *Nutrition Research Reviews*, 17(1), 99–110.

Suarni dan S. Widowati. (2010). *Struktur, Komposisi, dan Nutrisi Jagung*. Balai Penelitian Tanaman Serealia: Sulawesi Selatan.

Suksomboon, A., Phimolsiripol, Y., & Charoenrein, S. (2020). Effect of Non-starch Components in Cassava Flour on Its Gelatinization and Retrogradation Properties. *International Journal of Biological Macromolecules*, 155, 455–462. https://doi.org/10.1016/j.ijbiomac.2020.03.216.

Szczesniak, A. S. (2002). Texture is a Sensory Property. *Food Quality and Preference*, 13(4), 215–225.

Tefera, T., Kanampiu, F., De Groote, H., Hellin, J., Mugo, S., Kimenju, S., ... & Banziger, M. (2011). The Metal Silo: An Effective Grain Storage Technology

for Reducing Post-harvest Insect and Pathogen Losses in Maize while Improving Smallholder Farmers' Food Security in Developing Countries. *Crop Protection*, 30(3), 240–245.

Tollenaar, M., & Daynard, T. B. (1982). Effect of Source-sink Ratio on Dry Matter Accumulation and Leaf Senescence in Maize. *Agronomy Journal*, 74(5), 778–783.

Trisnawati, L., Haryanto, B., & Santosa, D. A. (2011). Potensi Tepung *Mocaf* sebagai Bahan Baku Pangan Alternatif Pengganti Tepung Terigu. *Jurnal Pangan*, 20(3), 205–214.

Uchechukwu-Agua, A. D., Caleb, O. J., & Opara, U. L. (2015). Postharvest Handling and Storage of Fresh Cassava Root and Products: a Review. *Food and Bioprocess Technology*, 8(4), 729–748. https://doi.org/10.1007/s11947-015-1478-z.

Vasal, S. K. (2000). The Quality Protein Maize Story. *Food and Nutrition Bulletin*, 21(4), 445–450.

Varela, P., & Fiszman, S. M. (2011). Exploring the Sensory Space of Crispy-crunchy Ooods: A Case Study with Freshly Fried Potato Chips. *Food Research International*, 44(9), 2634–2641.

Wargiono, J., Harnowo, D., & Widodo, Y. (2002). *Teknologi Pascapanen dan Pengolahan Singkong*. Balai Penelitian Tanaman Kacang-Kacangan dan Umbi-Umbian: Jakarta.

Watson, S. A. (2003). Description, Development, Structure, and Composition of the Corn Kernel. Dalam: White, P. J., & Johnson, L. A. (Eds.), *Corn: Chemistry and Technology* (hal. 69–106). St. Paul, MN: AACC International.

Widodo, S. (2010). *Singkong: Potensi dan Pengembangannya sebagai Pangan Alternatif*. Penebar Swadaya: Jakarta.

Widayat, D., Murti, N. A., & Cahyadi, A. (2020). Pengaruh Penambahan Tepung MOCAF terhadap Karakteristik Fisik dan Kimia Ekstrudat Jagung. *Jurnal Teknologi dan Industri Pangan*, 31(1), 22–29.

Wiguna, A. H., Santoso, U., & Wibowo, R. (2017). Characterization of Modified Cassava Flour (MOCAF) and Its Potential Substitution in Food Processing. *International Food Research Journal*, 24(5), 2316–2323.

Westby, A. (2009). Cassava Utilization, Storage and Small-scale Processing. *Cassava: Biology, Production and Utilization*, 1, 281–300. https://doi.org/10.1079/9780851995243.0281.

Yenny, Marya. (2018). Penggunaan Tepung Gaplek sebagai Substitusi Tepung Terigu dalam Pembuatan Bolu Kukus. *National Conference of Creative Industry: Sustainable Tourism Industry for Economic Development* e-ISSN No. 2622-7436.

Yousf, N., Nazir, F., Salim, R., Ahsan, H., dan Sirwal, A. (2017). Water Solubility Index and Water Absorption Index of Extruded Product from Rice and Carrot Blend. *Journal of Pharmacognosy and Phytochemistry* 6(6): 2165-2168.

Zhang, H., Zhang, F., & Wang, X. (2014). Effects of Moisture Content on the Physical Properties of Extruded Snacks Made from Corn Starch. *International Journal of Food Engineering*, 10(3), 377–385. https://doi.org/10.1515/ijfe-2013-0076.