

DAFTAR PUSTAKA

- Ajita, T. (2018). Extrusion Cooking Technology: An Advance Skill for Manufacturing of Extrudate Food Products. *Extrusion of Metals, Polymers and Food Products*. <https://doi.org/10.5772/intechopen.73496>
- Alibaba. (2022). *Multifungsi Twin Screw Lab Engah Jagung Makanan Ringan Extruder*. Indonesian.Alibaba.Com. <https://indonesian.alibaba.com/product-detail/multifunctional-twin-screw-lab-corn-puff-snacks-food-extruder-533451278.html>
- Altan, A., & Maskan, M. (2012). Development of Extruded Foods by Utilizing Food Industry By-Products. *Advances in Food Extrusion Technology*, 137–184. <https://doi.org/10.1201/b11286-12>
- Anderson, R. A., Conway, H. F., & Peplinski, A. J. (1970). Gelatinization of Corn Grits by Roll Cooking, Extrusion Cooking and Steaming. *Starch - Stärke*, 22(4), 130–135. <https://doi.org/10.1002/star.19700220408>
- ASABE. (2003). ANSI/ASAE S319.3: Method of determining and expressing fineness of feed materials by sieving. *Asabe*, 601–605.
- Beakawi Al-Hashemi, H. M., & Baghabra Al-Amoudi, O. S. (2018). A review on the angle of repose of granular materials. *Powder Technology*, 330(2017), 397–417. <https://doi.org/10.1016/j.powtec.2018.02.003>
- Berk, Z. (2018). Extrusion Food Process Engineering and Technology. *Springer Series in Materials Science*, 264, 373–394. <https://doi.org/10.1016/B978-0-12-812018-7.00015-4>
- Bourne, M. C. (2002). *Food Texture and Viscosity: Concept and Measurement* (2nd Editon). Academic Press.
- Brown, M. L. (2015). A Comparative Study of the Effects of Non-starch Polysaccharide Gums on Physical Properties of Single-screw Extruded Aquafeed. *Journal of Food Processing & Technology*, 06(06). <https://doi.org/10.4172/2157-7110.1000457>
- BSN. (2015). SNI 2886:2015 Makanan Ringan Ekstrudat. *Standart Nasional Indonesia*, 2886, 1–41.
- Camire, M. E. (2000). Chemical and Nutritional Changes in Food During

- Extrusion. In M. N. Riaz (Ed.), *Extruders in Food Application* (pp. 127–147). CRC Press.
- Carvalho, C. W. P., Takeiti, C. Y., Onwulata, C. I., & Pordesimo, L. O. (2010). Relative effect of particle size on the physical properties of corn meal extrudates: Effect of particle size on the extrusion of corn meal. *Journal of Food Engineering*, 98(1), 103–109. <https://doi.org/10.1016/j.jfoodeng.2009.12.015>
- Case, L. P., Daristotle, L., Hayek, M. G., & Raasch, M. F. (2011). Nutrient Content of Pet Foods. *Canine and Feline Nutrition*, 141–162. <https://doi.org/10.1016/b978-0-323-06619-8.10016-7>
- Chandresh, S., & Priya, S. (2020). Extrusion Cooking Technology in Food Processing-An Overview. *International Research Journal of Engineering and Technology*, 7(5), 4449–4458. www.irjet.net
- Chen, J., Serafin, F. L., PANDYA, R. N., & DAUN, H. (1991). Effects of Extrusion Conditions on Sensory Properties of Corn Meal Extrudates. *Journal of Food Science*, 56(1), 84–89. <https://doi.org/10.1111/j.1365-2621.1991.tb07981.x>
- Choton, S., Gupta, N., Bandral, J. D., Anjum, N., & Choudary, A. (2020). Extrusion technology and its application in food processing: A review. *The Pharma Innovation*, 9(2), 162–168. <https://doi.org/10.22271/tpi.2020.v9.i2d.4367>
- Coulibaly, A., & Kouakou, B. (2012). Extruded Adult Breakfast Based on Millet and Soybean: Nutritional and Functional Qualities, Source of Low Glycemic Food. *Journal of Nutrition & Food Sciences*, 02(07). <https://doi.org/10.4172/2155-9600.1000151>
- Ding, Q. B., Ainsworth, P., Tucker, G., & Marson, H. (2005). 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>
- Dopporto, M. C., Dini, C., Mugridge, A., Viña, S. Z., & García, M. A. (2012). Physicochemical, thermal and sorption properties of nutritionally differentiated flours and starches. *Journal of Food Engineering*, 113(4), 569–576. <https://doi.org/10.1016/j.jfoodeng.2012.07.021>

- Eckhoff, S. R., Paulsen, M. ., & Yang, S. . (2003). MAIZE. In *Encyclopedia of Food Science and Nutrition* (Vol. 1, pp. 3647–3653).
- Ek, P., Baner, J. M., & Ganjyal, G. M. (2020). Extrusion processing of cereal grains, tubers, and seeds. In *Extrusion Cooking*. Elsevier Inc. <https://doi.org/10.1016/b978-0-12-815360-4.00008-0>
- Ek, P., & Ganjyal, G. M. (2020). Basics of extrusion processing. In *Extrusion Cooking*. Elsevier Inc. <https://doi.org/10.1016/b978-0-12-815360-4.00001-8>
- Ek, P., Kowalski, R. J., & Ganjyal, G. M. (2020). Raw material behaviors in extrusion processing I (Carbohydrates). In *Extrusion Cooking*. Elsevier Inc. <https://doi.org/10.1016/b978-0-12-815360-4.00004-3>
- 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. (1995). *FAO Term Portal*. FAO Term. <https://www.fao.org/faoterm/viewentry/en/?entryId=172665>
- FAOSTAT. (2021). *FAOSTAT Crops and Livestocks Product*. FAO. <http://www.fao.org/faostat/en/#data/QCL>
- Fayose, F. T. (2013). Expansion Characteristics of Selected Starchy Crops during Extrusion. *The West Indian Journal of Engineering*, 35(2), 58–64.
- Filli, K. B., Nkama, I., Jideani, V. A., & IBOK, I. U. (2012). System Parameters and Product Properties Responses During Extrusion of Fura from Millet-Soybean Mixtures. *Nigerian Food Journal*, 30(1), 82–100. [https://doi.org/10.1016/s0189-7241\(15\)30017-5](https://doi.org/10.1016/s0189-7241(15)30017-5)
- Gandhi, N., Singh, B., Singh, P., & Sharma, S. (2020). Functional, Rheological, Morphological and Micro-structural Properties of Extrusion Processed Corn and Potato Starches. *Starch Stärke*, 004, 1–26. <https://doi.org/10.1002/jcph.834>
- Gat, Y., & Ananthanarayan, L. (2016). Use of paprika oily extract as pre-extrusion colouring of rice extrudates: impact of processing and storage on colour stability. *Journal of Food Science and Technology*, 53(6), 2887–2894. <https://doi.org/10.1007/s13197-016-2271-3>
- Gu, B.-J., Kowalski, R. J., & Ganjyal, G. (2017). FOOD EXTRUSION

PROCESSING :An Overview. *WSU Peer Reviewed*, 1–8.

Guha, M., & Ali, S. Z. (2006). Extrusion cooking of rice: Effect of amylose content and barrel temperature on product profile. *Journal of Food Processing and Preservation*, 30(6), 706–716. <https://doi.org/10.1111/j.1745-4549.2006.00099.x>

Gutkoski, L. C., & El-Dash, A. A. (1999). Effect of extrusion process variables on physical and chemical properties of extruded oat products. *Plant Foods for Human Nutrition*, 54(4), 315–325. <https://doi.org/10.1023/A:1008101209353>

Haryono. (2012). Maize for food, feed and fuel in Indonesia : Challenges and opportunity overview of maize production. *Proceeding International Maize Conference Maize*, 3–9.

Herminingrum, S. (2019). The genealogy of traditional Javanese cassava-based foods. *Journal of Ethnic Foods*, 6(1), 1–16. <https://doi.org/10.1186/s42779-019-0015-5>

Homchoudhury, M., Chakraborty, R., Sarkar, S., & Raychaudhuri, U. (2012). Characterization of extrudate prepared from rice (*Oryza sativa* l) and chapra (*Fenneropenaeus indicus*) by twin screw extrusion. *Fishery Technology*, 49(1), 50.

Hutchings, J. (2003). *Expectations, Color, and Apperance of Food*.

Iriany, N. R., Yasin, M. H. G., & Takdir, A. M. (2007). Asal, Sejarah, Evolusi, dan Taksonomi Tanaman Jagung. *Jagung: Teknik Produksi Dan Pengembangan*, 1–15.

ITIS. (2000). *Manihot esculenta Crantz*. Integrated Taxonomic Information System.

https://www.itis.gov/servlet/SingleRpt/SingleRpt?search_topic=TSN&search_value=503688&print_version=PRT&source=to_print#null

Kantrong, H., Charunuch, C., Limsangouan, N., & Pengpinit, W. (2018). Influence of process parameters on physical properties and specific mechanical energy of healthy mushroom-rice snacks and optimization of extrusion process parameters using response surface methodology. *Journal of Food Science and Technology*, 55(9), 3462–3472. <https://doi.org/10.1007/s13197-018-3271-2>

- Kemendag. (2014). Profil Komoditas : Jagung. In *Kementrian Perdagangan*. Kementerian Perdagangan Republik Indonesia.
- Kumar, N., Sarkar, B. C., & Sharma, H. K. (2010). Development and characterization of extruded product using carrot pomace and rice flour. *International Journal of Food Engineering*, 6(3). <https://doi.org/10.2202/1556-3758.1824>
- Larasati, W. (2021). Ringkasan Eksekutif Pengeluaran dan Konsumsi Penduduk Indonesia 2021. In A. Chamami, I. Sahara, & M. I. Khoer (Eds.), *Badan Pusat Statistik Indonesia*. BPS. <https://doi.org/10.25104/mtm.v16i1.840>
- Lazou, A. E., Michailidis, P. A., Thymi, S., Krokida, M. K., & Bisharat, G. I. (2007). Structural properties of corn-legume based extrudates as a function of processing conditions and raw material characteristics. *International Journal of Food Properties*, 10(4), 721–738. <https://doi.org/10.1080/10942910601154305>
- Lazou, A., & Krokida, M. (2010). Structural and textural characterization of corn-lentil extruded snacks. *Journal of Food Engineering*, 100(3), 392–408. <https://doi.org/10.1016/j.jfoodeng.2010.04.024>
- Macho, O., Demková, K., Gabrišová, L., Čierny, M., Mužíková, J., Galbavá, P., Nižnanská, Ž., Blaško, J., Peciar, P., Fekete, R., & Peciar, M. (2020). Analysis of static angle of repose with respect to powder material properties. *Acta Polytechnica*, 60(1), 73–80. <https://doi.org/10.14311/AP.2020.60.0073>
- Mazumder, P., Roopa, B. S., & Bhattacharya, S. (2007). Textural attributes of a model snack food at different moisture contents. *Journal of Food Engineering*, 79(2), 511–516. <https://doi.org/10.1016/j.jfoodeng.2006.02.011>
- Muhandri, T. (2017). Pengaruh Ukuran Partikel, Kadar Padatan, NaCl dan Na₂CO₃ Terhadap Sifat Amilograf Tepung dan Pati Jagung. In *Jurnal Teknologi dan Industri Pangan* (Vol. 18, Issue 2, pp. 109–117).
- 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

- Navale, S. A., Swami, S. B., & Thakor, N. J. (2015). Extrusion Cooking Technology for Foods : A Review. *Journal of Ready To Eat Food*, 2(3), 66–80.
- Nielsen, S. S. (2010). Moisture and Total Solids Analysis. In *Instructor's Manual for Food Analysis: Second Edition*. https://doi.org/10.1007/978-1-4615-5439-4_8
- Nierle, W., Elbaya, A. ., Seiler, K., Fretzdorff, B., & Wolf, J. (1980). Veranderungen der getreideinhaltsstoffe wahrend der extrusion mit einem doppelschneckenextruder. *Getreide Mehl Brot*, 34, 73–76.
- Oikonomou, N. A., & Krokida, M. K. (2011). Literature data compilation of WAI and WSI of extrudate food products. *International Journal of Food Properties*, 14(1), 199–240. <https://doi.org/10.1080/10942910903160422>
- Pankyamma, V., Basu, S., Bhadrar, S. S., Chouksey, M. K., & Gudipati, V. (2014). Fish oil-fortified extruded snacks: Evaluation of physical properties and oxidative stability by response surface methodology. *Journal of Food Process Engineering*, 37(4), 349–361. <https://doi.org/10.1111/jfpe.12091>
- 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. de J., Tang, J., & Swanson, B. G. (2007). Evaluation of methods for expansion properties of legume extrudates. *Applied Engineering in Agriculture*, 23(6), 777–783.
- Paula, A. M., & Conti-Silva, A. C. (2014). Texture profile and correlation between sensory and instrumental analyses on extruded snacks. *Journal of Food Engineering*, 121(1), 9–14. <https://doi.org/10.1016/j.jfoodeng.2013.08.007>
- Ramachandra, H. G., & Thejaswini, M. L. (2015). Extrusion Technology: A Novel Method Of Food Processing. *International Journal of Innovative Science, Engineering & Technology*, 2(4), 358–369. http://ijiset.com/vol2/v2s4/IJISSET_V2_I4_51.pdf
- 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>
- Renoldi, N., Peighambardoust, S. H., & Peressini, D. (2021). The effect of rice bran on physicochemical, textural and glycaemic properties of ready-to-eat extruded corn snacks. *International Journal of Food Science and Technology*, 56(7), 3235–3244. <https://doi.org/10.1111/ijfs.14939>
- Riaz, M. N. (2019). Food extruders. *Handbook of Farm, Dairy and Food Machinery Engineering*, 483–497. <https://doi.org/10.1016/B978-0-12-814803-7.00019-1>
- Ruiz-Gutiérrez, M. G., Sánchez-Madrigal, M. Á., & Quintero-Ramos, A. (2018). The Extrusion Cooking Process for the Development of Functional Foods. *Extrusion of Metals, Polymers and Food Products*. <https://doi.org/10.5772/intechopen.68741>
- Sahu, C., Patel, S., & Tripathi, A. K. (2022). Effect of extrusion parameters on physical and functional quality of soy protein enriched maize based extruded snack. *Applied Food Research*, 2(1), 100072. <https://doi.org/10.1016/j.afres.2022.100072>
- Santillán-Moreno, A., Martínez-Bustos, F., Castaño-Tostado, E., & Amaya-Llano, S. L. (2011). Physicochemical Characterization of Extruded Blends of Corn Starch-Whey Protein Concentrate-Agave tequilana Fiber. *Food and Bioprocess Technology*, 4(5), 797–808. <https://doi.org/10.1007/s11947-009-0223-x>
- Serna-Saldivar, S. O. (2004). Foods from Maize Food Uses of Specialty Corns. *Most*, 242–253.
- Serna-Saldivar, S. O. (2010). *Grain Development, Morphology, and Structure*. CRC Press.
- Seth, D., Badwaik, L. S., & Ganapathy, V. (2015). Effect of feed composition, moisture content and extrusion temperature on extrudate characteristics of yam-corn-rice based snack food. *Journal of Food Science and Technology*, 52(3), 1830–1838. <https://doi.org/10.1007/s13197-013-1181-x>

- Sharifi, S., Majzoobi, M., & Farahnaky, A. (2021). Development of healthy extruded maize snacks; Effects of soybean flour and feed moisture content. *International Journal of Food Science and Technology*, 56(7), 3179–3187. <https://doi.org/10.1111/ijfs.14842>
- Shittu, T. A., Alimi, B. A., Wahab, B., Sanni, L. O., & Abass, A. B. (2016). Cassava Flour and Starch: Processing Technology and Utilization. In *Tropical Roots and Tubers: Production, Processing and Technology* (Issue July 2018). <https://doi.org/10.1002/9781118992739.ch10a>
- Singh, R. P., & Heldman, D. R. (2014). Extrusion Processes for Foods. In *Introduction to Food Engineering* (pp. 743–766). <https://doi.org/10.1016/b978-0-12-398530-9.00014-0>
- Singh, S., Gamlath, S., & Wakeling, L. (2007). Nutritional aspects of food extrusion: A review. *International Journal of Food Science and Technology*, 42(8), 916–929. <https://doi.org/10.1111/j.1365-2621.2006.01309.x>
- Singha, P., Singh, S. K., Muthukumarappan, K., & Krishnan, P. (2018). Physicochemical and nutritional properties of extrudates from food grade distiller's dried grains, garbanzo flour, and corn grits. *Food Science and Nutrition*, 6(7), 1914–1926. <https://doi.org/10.1002/fsn3.769>
- Sobukola, O. P., Babajide, J. M., & Ogunsade, O. (2013). Effect of brewers spent grain addition and extrusion parameters on some properties of extruded yam starch-based pasta. *Journal of Food Processing and Preservation*, 37(5), 734–743. <https://doi.org/10.1111/j.1745-4549.2012.00711.x>
- Strahm, B. (2020). Instrumentation for extrusion processing. In *Extrusion Cooking*. Elsevier Inc. <https://doi.org/10.1016/b978-0-12-815360-4.00009-2>
- Suarni, & Widowati, S. (2010). Struktur, Komposisi, dan Nutrisi Jagung. In *Jagung: Teknik Produksi dan Pengembangan* (pp. 410–426). <http://balitsereal.litbang.pertanian.go.id/wp-content/uploads/2016/11/tiganol.pdf>
- Tadesse, S. A., Bultosa, G., & Abera, S. (2019). Functional and physical properties of sorghum-based extruded product supplemented with soy meal flour. *Cogent Food and Agriculture*, 5(1). <https://doi.org/10.1080/23311932.2019.1707608>

- Tewe, O. (2004). An Overview of Cassava In sub-Saharan Africa : Nutritional profile. *Cassava for Livestock Feed in Sub-Saharan Africa*, 2. <http://scholar.google.com/scholar?hl=en&btnG=Search&q=intitle:Cassava+for+livestock+feed+in+sub-Saharan+Africa#1>
- Thakur, S., Singh, N., Kaur, A., & Singh, B. (2017). Effect of Extrusion on Physicochemical Properties, Digestibility, and Phenolic Profiles of Grit Fractions Obtained from Dry Milling of Normal and Waxy Corn. *Journal of Food Science*, 82(5), 1101–1109. <https://doi.org/10.1111/1750-3841.13692>
- Tumwine, G., & Asiimwe, A. (2019). Effect of *barrel* temperature and blending ratio on the sensory and physical properties of cassava-extruded snacks. *Cogent Food and Agriculture*, 5(1). <https://doi.org/10.1080/23311932.2019.1633795>
- 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>
- Udoro, E. O., Anyasi, T. A., & Jideani, A. I. O. (2021). Process-induced modifications on quality attributes of cassava (*Manihot esculenta crantz*) flour. *Processes*, 9(11), 1–19. <https://doi.org/10.3390/pr9111891>
- VanHouten, M., Miller, C., Fritz, L., & Plel. (2007). *Process of Forming Corn Flaking Grits of Improved Quality with Minimization of Production of Corn Doubles* (Patent No. US 7,246,762 B2).
- Varo, P., Laine, R., & Koivistoinen, P. (1983). Effect of heat treatment of dietary fiber: interlaboratory study. *Journal - Association of Official Analytical Chemists*, 66(4), 933–938. <https://doi.org/10.1093/jaoac/66.4.933>
- Varsha, K., & Mohan, S. (2016). Extruded Product Quality Assessment Indices: a Review. *International Journal of Agriculture Sciences*, 8(54), 975–3710. https://bioinfopublication.org/files/articles/8_54_31_IJAS.pdf
- Vasanthan, T., Gaosong, J., Yeung, J., & Li, J. (2002). Dietary fiber profile of barley flour as affected by extrusion cooking. *Food Chemistry*, 77(1), 35–40. [https://doi.org/10.1016/S0308-8146\(01\)00318-1](https://doi.org/10.1016/S0308-8146(01)00318-1)

- Ward, H. (2021). *Snack Food - Indonesian Statistic*. Statista.
<https://www.statista.com/outlook/cmo/food/confectionery-snacks/snack-food/indonesia#volume>
- Wargiono, J., & Richana, N. (2008). Traditional and New Uses of Cassava Roots in Indonesia. In *Proceedings of the Eight Regional Workshop* (8th).
- 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>
- Yadav, K. C., Pashupati, M., Pramesh, K. D., Ranjit, R., Ghanendra, G., & Sushil, D. (2015). Effects of incorporation of cassava flour on characteristics of corn grit-rice grit-chickpea flour blend expanded extrudates. *African Journal of Food Science*, 9(8), 448–455. <https://doi.org/10.5897/ajfs2014.1243>
- Yağci, S., & Göğüş, F. (2009). Development of extruded snack from food by-products: A response surface analysis. *Journal of Food Process Engineering*, 32(4), 565–586. <https://doi.org/10.1111/j.1745-4530.2007.00232.x>
- Yousf, N., Nazir, F., Salim, R., Ahsan, H., & Sirwal, A. (2017). Water solubility index and water absorption index of extruded product from rice and carrot blend. *Journal of Pharmacognosy and Phytochemistry*, 6(66), 2165–2168.
- Yovchev, A., Stone, A., Hood-Niefer, S., & Nickerson, M. (2017). Influence of the extrusion parameters on the physical properties of chickpea and barley extrudates. *Food Science and Biotechnology*, 26(2), 393–399. <https://doi.org/10.1007/s10068-017-0054-x>
- Yusuf, M., Halilu, M., & Filli, K. (2018). Influence of Extrusion Variables on Proximate Composition Some Nutrient and Antinutrient Contents of Dakuwa Extrudates Produced from Blends of Sorghum (*Sorghum bicolor* L) Groundnut (*Arachis hypogea* L) and Tigernut (*Cyperus esculentus*). *Current Journal of Applied Science and Technology*, 26(4), 1–20. <https://doi.org/10.9734/cjast/2018/40037>