

## BAB V KESIMPULAN DAN SARAN

### 5.1. Kesimpulan

1. Perbedaan proporsi ayam dengan tepung nangka muda memberikan pengaruh terhadap sifat fisikokimia dan organoleptik *nugget* yaitu, kadar air (59,06-68,33%), WHC (*Water Holding Capacity*) adonan (34,38-126,63%) dan WHC *nugget* (100,09-166,54%), kestabilan emulsi yang dinyatakan dalam cairan yang keluar (%) (0-3,79%), daya serap minyak (15,27-21,99%), *hardness* (4716,09-16264,43), *cohesiveness* (0,3075-0,5353), nilai L (54,2-69,1), a\* (5,3-8,2), b\* (13,6-19,6), Hue (°) (58,7034-74,7584), *chroma* (15,9025-20,2581), dan tingkat kesukaan terhadap warna (3,437-5,719), rasa (4,273-5,796), tekstur (4,342-5,372), serta *juiciness* (4,65-5,603).
2. Peningkatan proporsi tepung nangka muda dapat menurunkan kadar air, daya serap minyak, *cohesiveness*, serta meningkatkan WHC, kestabilan emulsi, dan *hardness* dari *nugget*.
3. Peningkatan proporsi tepung nangka muda dapat menurunkan tingkat kesukaan warna, rasa, tekstur, dan *juiciness* dari *nugget*.
4. Perlakuan terbaik berdasarkan uji organoleptik yang dihitung berdasarkan luas daerah terbesar *spider web* adalah perlakuan proporsi ayam dengan tepung nangka muda (95:5) dengan kadar air (68,33%), %cairan yang keluar (3,79%), WHC adonan dan *nugget* goreng (34,66%) dan (100,84%), daya serap minyak (21,99%), *hardness* (4716,09 g), *cohesiveness* (0,5353), warna putih agak coklat dengan nilai L, a\*, b\*, hue, dan *chroma* berturut-turut sebesar 69,1; 5,3; 19,6; 74,7584; dan 20,2581, serta skor kesukaan terhadap warna, skor kesukaan terhadap rasa, skor kesukaan terhadap tekstur, dan skor

kesukaan terhadap *juiciness* berturut turut sebesar adalah 5,719 (agak suka); 5,229 (agak suka); 5,038 (agak suka), dan 5,603 (agak suka).

## **5.2. Saran**

1. Perlu dilakukan penelitian lebih lanjut untuk memperbaiki sifat organoleptik *nugget* ayam-tepung nangka muda pada proporsi ayam dengan tepung nangka muda di atas 80:20.

## DAFTAR PUSTAKA

- Aaen, R., F. W. Brodin, S. Simon, E.B. Heggset, and K. Syverud. 2019. Oil-in-Water Emulsions Stabilized by Cellulose Nanofibrils: The Effects of Ionic Strength and pH, *Nanomaterials*. 9(259):1-14.
- Abed, S.M., H. Abdelmoneim, A.A. Noman, S. Niazi, A.M.B.A. Ammar. 2016. Inulin as Prebiotics and its Applications in Food Industry and Human Health; A Review. *International Journal of Agriculture Innovations and Research*. 5(1): 2319–1473.
- Acero, L.H. 2019. Insecticidal Property of Jackfruit (*Artocarpus heterophyllus*) Peel Ethanol Extract against Rice Weevils (*Sitophilus oryzae*), *International Journal of Bioscience, Biochemistry, and Bioinformatics*. 9(3):158-165.
- Ahmed, P.O., M.F. Miller, C.E. Lyon, H.M. Vaughters, J.O. Reagan. 1990. Physical and Sensory Characteristics of Low-Fat Fresh Pork Sausage Processed with Various Levels of Added Water, *Journal of Food Science*. 55:625-628.
- Amalia, K.D. dan W.H. Susanto. 2017. Pembuatan Lempok Nangka (*Artocarpus heterophyllus*) (Kajian Tingkat Kematangan Buah Nangka Bubur dan Konsentrasi Maizena Terhadap Karakteristik Fisik, Kimia, Organoleptik), *Jurnal Pangan dan Agroindustri*. 5(3):38-49
- Aman, M.B. 1983. Effect of Cooking and Preservation Methods on the Water Holding Capacity (WHC) of Mullet Fish in Relation with Changes Occured in Muscle Proteins, *Zeitschrift fur Lebensmittel Untersuchung and Forschung*, 177:345-347.
- American Association of Clinical Chemistry. 2001. The Definition of Dietary Fiber, *AACC Report*. 46(3):112-126.
- Amilusolichah. 2018. Kajian Kualitas Selai Lembaran Buah Naga Merah (*Hylocereus polyrhizus*) dengan Jenis dan Konsentrasi Gelling Agent (Agar ATC, Karagenan), *Skripsi S-1*, Fakultas Pertanian dan Peternakan, Universitas Muhammadiyah Malang, Malang. <http://eprints.umm.ac.id/40498/>
- Amiruddin, C. 2013. Pembuatan Tepung Wortel (*Daucus carrota* L.) dengan Variasi Suhu Pengering, *Skripsi S-1*, Fakultas Pertanian,

- Universitas Hasanuddin, Makassar. <http://repository.unhas.ac.id/bitstream/handle/123456789/3683/>
- Ammar, M.S. 2017. Producing of High Fiber Chicken Meat Nuggets by Using Different Fiber Sources, *Middle East Journal of Agriculture Research*. 6(2):415-423.
- AOAC. 2006. *Official Methods of Analysis 16<sup>th</sup> Edition*. USA: AOAC International.
- Asgar, A. dan D. Musaddad. 2008. Pengaruh Media, Suhu, dan Lama Blansing Sebelum Pengeringan Terhadap Mutu Lobak Kering, *Jurnal Hortikultura*. 18(1):87-94
- Association of Food and Drug Officials (AFDO). 2014. *Safe Practices for Sausage Production Distance Learning Course Manual*. Washington DC: US Department of Agriculture (USDA). 19-20.
- Astiti, N.M.A.G.R. 2018. *Pengantar Ilmu Peternakan*. Denpasar: Penerbit Universitas Warmadewa. 51, 53-55.
- Australian Meat Processor Corporation (AMPC). 2017. *Muscle Structure and Water Retention in Fresh and Cooked Meat Products-Final Report*. [https://www.ampc.com.au/uploads/cgblog/id352/2013-5009 - TMS 1 - Final report AMPC FINAL.pdf](https://www.ampc.com.au/uploads/cgblog/id352/2013-5009_-_TMS_1_-_Final_report_AMPC_FINAL.pdf). (18 Desember 2019)
- Aziz, I., S. Nurbayati, L.A. Dalili. 2014. Pemanfaatan Limbah Kulit Ayam *Broiler* sebagai Bahan Baku Pembuatan Biodiesel, *Jurnal Kimia Valensi*. 4(2):90-97.
- Badan Litbang Pertanian. 2011. Teknik Mengolah Daging yang Higienis dan Modern, *Agroinovasi*. 3430:14-16
- Badan Pusat Statistik. 2018. *Statistik Tanaman Buah-buahan dan Sayuran Tahunan Indonesia 2017*. Jakarta: Badan Pusat Statistik Indonesia. 12
- Badan Standarisasi Nasional. 2014. *SNI 6683:2014 Nugget Ayam*. Jakarta: Badan Standarisasi Nasional. 1-3.
- Barbut, S. 2015. *The Science of Poultry and Meat Processing Chapter 14: Battering and Breeding-Production Under HACCP*. Ontario: University of Guelph. 1-35.
- Barretto, A.C.S., M.T.B. Pacheco, M.A.R. Pollonio. 2015. Effect of the Addition of Wheat Fiber and Partial Pork Back Fat on the Chemical

- Composition, Texture, and Sensory Property of Low-Fat Bologna Sausage Containing Inulin and Oat Fiber, *Food Science and Technology*. 35(1):100-107.
- Boles, J.A. 1999. Meat Processing: Restructured Meats, *Canadian Meat Science Association News*. 12-14
- Borderias, A.J., I. Sanchez-Alonso, M. Perez-Mateos. 2005. New Applications of Fibres in Foods: Addition to Fishery Products, *Trends in Food Science and Technology*. 16: 458-465.
- Bowers, P. 1994. Golden Nuggets Pan Out Globally, *Poultry*.
- Canovas, G.V.B. and H.V. Mercado. 1996. *Dehydration of Foods*. Berlin: Springer Science+Business Media. 75.
- Chaplin, M.F. 2003. Fibre and Water Binding, *Proceedings of the Nutrition Society*. 62:223-227
- Chen, J.Y., M. Piva, and T.P. Labuza. 1984. Evaluation of Water Binding Capacity (WBC) of Food Fiber Sources, *Journal of Food Science*. 49:59-63.
- Cho, S., S.H. Yoon, J. Min, S. Lee, T. Tokar, S.O. Lee. 2016. Variation in US Consumers Acceptability of Korean Rice Cake, Seolgitteok, with Respect to Sensory Attributes and Nonsensory Factors, *Journal of Food Science*. 81(1).
- Choi, Y.S., P.K. Sik, C.J. Hun, K.H. Wook, S.D. Heon, K.J. Man, C.H. Jung, and K.C. Jei. 2010. Physico-chemical Properties of Chicken Meat Emulsion Systems with Dietary Fiber Extracted from *Makgeolli* Lees, *Korean Journal for Food Science and Animal Resources*. 30(6):910-917.
- Choo, S.S. and M.L. Dreher. 2001. *Handbook of Dietary Fiber*. New York: Marcek Dekker Inc. 2,5, 197-198
- Cui, S.W. and K.T. Roberts. 2009. *Dietary Fiber: Fulfilling The Promise of Added-Value Formulations*. New York: Elsevier Inc. 339-448.
- deMan, J.M. 1999. *Principles of Food Chemistry Third Edition*. Maryland: Aspen Publishers, Inc.
- Deputi Menegristek Bidang Pendayagunaan dan Pemasyarakatan Ilmu Pengetahuan dan Teknologi. 2000. *Nangka (Artocarpus heterophyllus Lamk.)*. Jakarta: Deputi Menegristek Bidang

Pendayagunaan dan Pemasyarakatan Ilmu Pengetahuan dan Teknologi. 2, 11

- Dewi, R.K. 2011. Kajian Komposisi Kimia, Kualitas Fisik dan Organoleptik *Duck Nuggets* dengan *Filler* Tepung Maizena pada Proporsi yang Berbeda, *Skripsi S-1*, Fakultas Pertanian, Universitas Sebelas Maret, Surakarta. <https://digilib.uns.ac.id/dokumen/detail/23914/Kajian-Komposisi-Kimia-Kualitas-Fisik-Dan-Organoleptik-Duck-Nuggets-Dengan-Filler-Tepung-Maizena-Pada-Proporsi-Yang-Berbeda>
- Dhingra, D., M. Michael, H. Rajput. 2012. Dietary Fibre in Foods: A Review, *Journal Food Science and Technology*. 49(3):255-266.
- Diniyah, N., A. Nafi, dan Z. Fachirah. 2015. Karakteristik *Nugget* yang Dibuat dengan Variasi Rasio Jamur Merang (*Volvariella volvaceae*) dan Tepung Koro Pedang (*Canavalia ensiformis* L.), *Jurnal Agroteknologi*. 9(1):1-12
- Fadilah, R. 2013. *Beternak Ayam Broiler*. Surabaya: AgroMedia. 33-34.
- Fang, Z., P. Lin, M. Ha, and R.D. Warner. 2018. Effects of Incorporation of Sugarcane Fibre on the Physicochemical and Sensory Properties of Chicken Sausages, *International Journal of Food Science and Technology*, 1-9.
- Fathoni, R.M., W. Tanwiriah, H. Indijani. 2017. Bobot Potong, Bobot Bagian *Edible* dan *Inedible* Ayam Lokal *Jimmy's Farm* Cipanas, Kabupaten Cianjur, Jawa Barat, *Students E-Journal Universitas Padjajaran*. 6(2):1-10.
- Figoni, P. 2010. *How Baking Works: Exploring the Fundamentals of Baking Science, Third Edition*. New York: John Wiley & Sons.
- Galvez, L.A., R.A. Patindol, and L.B. Mabesa. 2013. Influence of Variety and Sulfite on Controlling Browning Within Four Months of Storage of Dehydrated Jackfruit (*Artocarpus heterophyllus* Lam.) Pulp, *Annals of Tropical Research*. 35(2):40-59.
- Gebrehiwot, H.W., E. Baicha, Y. Hagos, and K. Wrkelul. 2018. Determination of pH and Water Holding Capacity of Beef from Selected Butcher Shops of Mekelle, Ethiopia, *Journal of Veterinary Medicine and Animal Health*. 10(6):159-164.
- George Fox University. 2018. *The Buzz: Jackfruit*. <https://georgefox.cafebonappetit.com/the-buzz-jackfruit/> (23 Agustus 2019)

- Guillon, F. and M. Champ. 2000. Structural and Physical Properties of Dietary Fibers and Consequences of Processing on Human Physiology, *Food Research International*. 33: 233-245.
- Gyurova, D. and R. Enikova. 2015. Dietary Fibers-Definitions, Classifications, and Analytical Methods for The Physiological Assessment of Their Content in Foods, *Journal of Bioscience and Biotechnology*. 209-2013
- Heinz, G. and P. Hautzinger. 2007. *Meat Processing Technology for Small to Medium-Scale Producers*. Bangkok: Food and Agriculture Organization of The United Nations Regional Office for Asia and The Pacific. 189, 197.
- Hughes, E., S. Cofrades, D.J. Troy. 1997. Effects of Fat Level, Oat Fibre, and Carrageenan on Frankfurters Formulated with 5, 12, and 30% Fat, *Meat Science*, 45(3):273-281.
- Hui, Y.H., W.K. Nip, R.W. Rogers, and O.A. Young. 2001. *Meat Science and Applications*. New York: Marcel-Dekker. 6-7.
- Hui, Y.H. 2006. *Bakery Products Science and Technology*. Iowa: Blackwell Publishing. 243-245.
- Isnaharani, Y. 2009. Pemanfaatan Jerami Nangka (*Artocarpus heterophyllus* Lmk.) dalam Pembuatan Cookies Tinggi Serat, *Skripsi S-1*, Departemen Gizi Masyarakat, Fakultas Ekologi Manusia, Institut Pertanian Bogor, Bogor. <https://repository.ipb.ac.id/jspui/bitstream/123456789/12532/>
- Jakobsen, L.M.A., S. Vuholm, M.D. Aaslyng, M. Kristensen, K.V. Sorensen, A. Raben, and U. Kehlet. 2014. Sensory Characteristics and Consumer Liking of Sausages with 10% Fat and Added Rye of Wheat Bra, *Food Science and Nutrition*, 534-546.
- Jelita, K. 2011. Verifikasi Metode Analisis Serat Pangan dengan Metode AOAC dan Asp Terhadap Parameter Repeatability, Selektivitas, dan Ruggedness, *Skripsi S-1*, Fakultas Teknologi Pangan, Institut Pertanian Bogor, IPB. <https://repository.ipb.ac.id/handle/123456789/48246>
- Jeon, H.J., J.H. Choe, Y. Jung, Z.A. Kruk, D.G. Lim, C. Jo. 2010. Comparison of the Chemical Composition, Textural Characteristics, and Sensory Properties of North and South Korean Native Chickens

- and Commercial Broilers, *Korean Journal of Food Science and Animal Resources*. 30(2):171-178.
- Johnson, S.K., V. Chua, R.S. Hall, A.L. Baxter. 2006. Lupin Kernel Fiber Foods Improve Bowel Function and Beneficially Modify Some Putative Faecal Risk Factors for Colon Cancer in Men, *British Journal of Nutrition*. 95: 372-378.
- Juarez, M., N. Aldai, O. Lopez-Campos, M. E. R. Dugan, B. Uttaro, J. L. Aalhus. 2010. Beef and Texture Juiciness (*in Handbook of Meat Processing*). Canada: Minister of Agriculture and Agri-Foods. 178.
- Kargar, M., K. Fayazmanesh, M. Alavi, F. Spyropoulos, I.T. Norton. 2012. Investigation into the Potential Ability of Pickering Emulsions (Food-Grade Particles) to Enhance the Oxidative Stability of Oil-in-Water Emulsions, *Journal of Colloid and Interface Science*. 366(1):209-215.
- Kartika, B., P. Hastuti, dan W. Suparnoto. 1988. *Pedoman Uji Inderawi Bahan Pangan*. Yogyakarta: Pusat Antar Universitas Pangan dan Gizi Universitas Gajah Mada.
- Kartikasari, L.R., Soeparno, dan Setiyono. 2001. Komposisi Kimia dan Studi Asam Lemak Daging Dada Ayam Broiler yang Mendapat Suplementasi Metionin pada Pakan Berkadar Protein Rendah, *Buletin Peternakan*. 25(1):33-39.
- Kementerian Kesehatan Republik Indonesia. 2013. *Angka Kecukupan Gizi (AKG) Tahun 2013*. Jakarta: Kementerian Kesehatan Republik Indonesia. <http://himagizi.lk.ipb.ac.id/files/2014/01/AKG2013-Hardin-Final-Edit-bersama.pdf>
- Kementerian Kesehatan Republik Indonesia. 2018. *Komposisi Kimia Daging Ayam per 100 gram BDD*. <http://panganku.org/id-ID/view> (26 Juli 2019)
- Kementerian Kesehatan Republik Indonesia. 2018. *Komposisi Kimia Nangka Muda per 100 gram BDD*. <http://panganku.org/id-ID/view> (9 Juli 2019)
- Kementerian Pertanian Direktorat Jenderal Hortikultura. 2014. *Statistik Produksi Hortikultura Tahun 2013*. Jakarta: Direktorat Jenderal Hortikultura. 34.
- Kerry, J., J. Kerry, and D. Ledward. 2002. *Meat Processing Improving Quality*. Boca Raton: Woodhead Publishing Limited. 332-344.

- Ketenoglu, O., B. Mert, and A. Tekin. 2014. Effects of Microfluidized Dietary Fibers on Stability Properties of Emulsions, *Journal of Texture Studies*. 45:295-306.
- Kim, Y., M.N. Faqih, S.S. Wang. 2001. Factors Affecting Gel Formation of Inulin, *Carbohydrate Polymers*. 46: 135-145.
- Kim, H., K. Kim, J. Lee, G. Kim, J. Choe, H. Kim, Y. Yoon, and C. Kim. 2015. Quality Evaluation of Chicken Nugget Formulated with Various Contents of Chicken Skin and Wheat Fiber Mixture, *Korean Journal for Food Science of Animal Resources*. 35:19-26.
- Konica Minolta. 2007. *Prcise Color Communication*. Japan: Konica Minolta Sensing, Inc. 18-20.
- Konica Minolta. 2015. *CR-20 Basic Operating Instructions*. Japan: Konica Minolta, Inc.
- Kritchevsky, D., C. Bonfield, and J.W. Anderson. 1990. *Dietary Fiber: Chemistry, Physiology, and Health Effects*. New York: Plesum Press. 1-5.
- Kurniasari, E., S. Waluyo, dan C. Sugianti. 2015. Mempelajari Laju Pengeringan dan Sifat Fisik Mie Kering Berbahan Campuran Tepung Terigu dan Tepung Tapioka, *Jurnal Teknik Pertanian Lampung*. 4(1):1-8.
- Kwarteng, J.O., F.K.K. Kori, and F. Akabanda. 2017. Effects of Blanching and Natural Convection Solar Drying on Quality Characteristics of Red Pepper (*Capsicum annum L.*), *International Journal of Food Science*. 1-6.
- Lee, S. and G.E. Inglett. 2007. Effect of an Oat B-Glucan-Rich Hydrocolloid (C-trim30) on the Rheology and Oil Uptake of Frying Batters, *Journal of Food Science*. 72:222-226.
- Lesiow, T. and Y.L. Xiong. 2013. A Simple, Reliable, and Reproductive Method to Obtain Experimental Pale, Soft, and Exudative (PSE) Pork, *Meat Science*. 93(3):489-494.
- Li, Y. 2005. Quality Changes in Chicken Nuggets Fried in Oils with Different Degrees of Hydrogenation, *Thesis*, Department of Bioresource Engineering, McGill University, Quebec. 228-229.
- Liu, J. 2016. Denaturation of Myofibrillar and Sarcoplasmic Proteins in Pale, Soft, and Exudative Like Meat: Effects on Water-Holding,

- Academic Dissertation*, Faculty of Agriculture and Forestry, University of Helsinki, Helsinki. 21, 28, 35.
- Lukman, I., N. Huda, and N. Ismail. 2009. Physicochemical and Sensory Properties of Commercial Chicken Nuggets, *Asian Journal of Food and Agro-Industry*. 2(2):171-180.
- Lutfika, E. 2006. Evaluasi Mutu Gizi dan Indkes Glikemik Produk Olahan Panggang Berbahan Dasar Tepung Ubi Jalar (*Ipomoea batatas* L.) Klon Unggul BB00105.10, *Skripsi S-I*, Fakultas Teknologi Pertanian, Institut Pertanian Bogor, Bogor. <https://repository.ipb.ac.id/handle/123456789/46040>
- Maina, J.W. 2018. Analysis of The Factors that Determine Food Acceptability, *The Pharma Innovation Journal*. 7(5):253-257.
- Marianski, S. and Marianski, A. 2018. *Spanish Sausages Authentic Recipes and Instructions*. Madrid: Bookmagic LLC.
- Matulesy, D.N., E.Suryanto, dan Rusman. 2010. Evaluasi Karakteristik Fisik, Komposisi Kimia, dan Kualitas Mikrobial Karkas *Broiler* yang Beredar di Pasar Tradisional Kabupaten Halmahera Utara, Maluku Utara, *Buletin Peternakan*. 34(3):178-185.
- McBurney, M. 2010. *Dietary Fiber: New Frontiers for Food and Health*. Gelderland: Wageningen Academic Publishers.
- Miklos, R., X. Xu, and R. Lametsch. 2011. Application of Pork Fat Diacylglycerols in Meat Emulsions, *Meat Science*. 87:202-205.
- Miyaguchi, Y., K. Nagayama, and M. Tsutsumi. 2000. Thermal and Functional Properties of Porcine Sarcoplasmic Proteins: A Comparison with Some Water Soluble Animal Proteins, *Animal Science Journal*. 71:416-424.
- Mohan, A. 2014. *Basic of Sausage Making: Formulation, Processing, and Safety*. Athens: UGA Extensions. 9-10, 15.
- Moskowitz, H.R., B. Drake, and Akesson. 1972. Psychophysical Measures of Texture, *Journal of Texture Studies*. 3(2):135-145.
- Motz, G. 2016. *The Great American Burger Book*. New York: Harry N. Abrams Publisher. 16-18.
- Muchtadi, T.R. dan Sugiyono. 1989. *Petunjuk Laboratorium: Ilmu Pengetahuan Bahan*. Bogor: Institut Pertanian Bogor.

- Nair, P.N., H. Palanivel, and R. Kumar. 2018. Jackfruit (*Artocarpus heterophyllus*) a Versatile but Underutilized Food Source, *Fiji Agriculture Journal*. 57(1):5-18
- Napitupulu, F.H. dan P.M. Tua. 2012. Perancangan dan Pengujian Alat Pengereng Kabinet dengan Tipe *Cabinet Dryer* untuk Kapasitas 7,5 kg per Siklus, *Jurnal Dinamis*. 2(10):8-18.
- Nisa, T.K. 2013. Pengaruh Substitusi Nangka Muda (*Artocarpus heterophyllus* Lmk) Terhadap Kualitas Organoleptik *Nugget* Ayam, *Food Science and Culinary Education Journal* . 2(1):63-71.
- Niu, F., B. Han, J. Fan, M. Kou, B. Zhang, Z.J. Feng, W. Pan, and W. Zhou. 2018. Characterization of Structure and Stability of Emulsions Stabilized with Cellulose Macro/Nano Particles, *Carbohydrate Polymers*, 3-26.
- Nurul, H., I. Boni, and I. Noryati. 2009. The Effect of Different Ratios of Dory Fish to Tapioca Flour on The Linear Expansion, Oil Absorption, Colour and Hardness of Fish Crackers, *International Food Research*. 16: 159–165
- Oliveira, J., S.V. Avanco, M. Garcia-Neto, E.H.G. Ponsano. 2016. Composition of Broilers Meat, *Journal of Applied Poultry Research*. 173-181.
- Ong, B.T., S.A.H. Nazimah, A. Osman, S.Y. Quek, Y.Y. Voon, D.M. Hashim, P.M. Chew, and Y.W. Kong. 2006. Chemical and Flavor Changes in Jackfruit (*Artocarpus heterophyllus* Lam.) Cultivar J3 during Ripening, *Postharvest Biology and Technology*. 40:279-286.
- Ores, J.C., D.C. Vieira, R.A.S. Fonseca, C. Schneider, and M.L.P. E. Santo. 2018. Wheat Dietary Fiber-Added to Low-Fat Semi-Dry Fermented Buffalo Sausage: Proximate Composition, Physical-Chemical, Microbiological, and Sensory Characteristics, *International Food Research Journal*. 25(4):1733-1744.
- Owens, C.M., C.Z. Alvarado, A.R. Sams. 2010. *Poultry Meat Processing Second Edition*. Boca Raton: CRC Press. 216-217.
- Pearson, A.M. and F.W. Tauber. 1984. *Processed Meats Second Edition*. Connecticut: AVI Publishing Company, Inc. 259-260, 262.
- Perera, C. 2011. Formulating Batters and Breeding for Reduced Fat Absorption in Fried Foods, *R&D Applications Seminar*, Chicago, 2-3 Agustus.

- Phintus, E.J., P. Weinberg, and I.S. Saguy. 1993. Criterion for Oil Uptake during Deep-fat Frying, *Journal of Food Science*. 58(1):204-205.
- Pratama, A., K. Suradi, R.L. Balia, H. Chairunnisa, H. A.W. Lengkey, D.S. Sutardjo, L. Suryaningsih, J. Gumilar, E. Wulandari, W.S. Putranto. 2015. Evaluasi Karakteristik Sifat Fisik Karkas Ayam Broiler Berdasarkan Badan Hidup, *Jurnal Ilmu Ternak*. 15(2):61-64
- Qi, M. 2017. Sunflower Stalk Pith Fibre: Investigation on Oil Holding Capacity, Oil-Fibre Interaction, and Related Application in Food, *Thesis*, Food Science, University of Guelph, Ontario. 3-12.
- Raghavan, S. 2007. *Handbook of Spices, Seasonings, and Flavoring Second Edition*. Boca Raton: CRC Press. 35-36, 113.
- Rahayu, W.P. 1998. *Diktat Penuntun Praktikum Penilaian Organoleptik*. Bogor: Institut Pertanian Bogor.
- Ranasinghe, R.A.S., S.D.T Maduwanthi, and R.A.U.J. Marapana. 2019. Nutritional and Health Benefits of Jackfruit (*Artocarpus heterophyllus* Lam.): A Review, *International Journal of Food Science*, 1-12
- Ranasinghe, R.A.S.N. and R.A.U.J. Marapana. 2019. Effect of Maturity Stage on Physicochemical Properties of Jackfruit (*Artocarpus heterophyllus* Lam.) Flesh, *World Journal of Dairy and Food Sciences*. 14(1):17-25.
- Rasyaf, M. 2012. *Panduan Beternak Ayam Pedaging*. Jakarta: Niaga Swadaya. 6.
- Samadi, B. 2010. *Sukses Beternak Ayam Ras Pedaging dan Petelur*. Jakarta: Pustaka Mina
- Sams, A.R. 2001. *Poultry Meat Processing*. Boca Raton: CRC Press. 129-240.
- Santhi, D., A. Kalaikannan, and S. Sureshkumar. 2015. Factors Influencing Meat Emulsion Properties and Product Texture: A Review, *Critical Reviews in Food Science and Nutrition*, 1-30.
- Santosa, M., A. Hasan, and K. Umam. 2016. Influence of Temperature and Blanching Duration on Quality of Minimal Processed Carrot (*Daucus carota* L.) during Freeze Storage, *International Food Research Journal*. 23:119-123.

- Saxena, A., A.S. Bawa, and P.S. Raju. 2011. *Jackfruit (Artocarpus heterophyllus Lamm.)*. Boca Raton: Woodhead Publishing Limited. 280-281.
- Setiawan, L.N. 2013. Sifat Fisikokimia dan Organoleptik *Nugget* Jamur Tiram dengan Variasi Konsentrasi Karagenan, *Skripsi S-1*, Fakultas Teknologi Pertanian, Universitas Katolik Widya Mandala Surabaya, Surabaya. <http://repository.wima.ac.id/12692/>
- Setyaningsih, D., A. Apriyantono, M. P. Sari. 2010. *Analisis Sensori untuk Industri Pangan dan Agro*. Bogor: Institut Pertanian Bogor.
- Sholaikah, M.I. 2015. Profil Protein Jaringan Otot Daging Ayam Potong Pra-Penyembelihan *Electrical Stunning* dan *Non Electrical Stunning*, *Skripsi S-1*, Fakultas Sains dan Teknologi, Universitas Islam Negeri Syarif Hidayatullah, Jakarta. <http://repository.uinjkt.ac.id/dspace/handle/123456789/27589>.
- Smith, D.M. 1988. Factors Influencing Texture Formation in Comminuted Meats, *Reciprocal Meat Conference Proceedings Vol. 41*, 48-52.
- Smith, D.S., J.N. Cash, W.K. Nip, Y.H. Hui. 1997. *Processing Vegetables: Science and Technology*. Boca Raton: CRC Press.
- Smith, D.M. 2001. Functional Properties of Muscle Proteins in Processes Poultry Products (in *Poultry Meat Processing*). Boca Raton: CRC Press.48, 51.
- Strakova, E., P. Suchy, F. Vitula, B. Vecerek. 2006. Differences in The Amino Acid Composition of Muscles from Pheasant and Broiler Chickens, *Archiv fur Tierzucht Journal*. 49(5):508-514.
- Subekti, E. 2010. Meat Quality of Raw Materials Nugget Laying Chicken Rejects, *Mediagro*. 6(2):31-36.
- Sudarmadji, S., B. Haryono, dan Suhardi. 1996. *Analisa Baham Makanan dan Pertanian*. Yogyakarta: Liberty Yogyakarta. 64.
- Sun, X.D. and R.A. Holley. 2010. Factors Influencing Gel Formation by Myofibrillar Proteins in Muscle Foods, *Comprehensive Reviews in Food Science and Food Safety*. 10:33-51.
- Suryanah, H. Nur, Anggraeni. 2016. Pengaruh Neraca Katiun Anion Ransum yang Berbeda Terhadap Bobot Karkas dan Bobot Giblet Ayam *Broiler*, *Jurnal Peternakan Nusantara*. 2(1):1-8.

- Syamsir, Elvira. 2011. Karakteristik Mutu Daging (dalam *Kulinologi Indonesia*). [http://achamad.staff.ipb.ac.id/wpcontent/plugins/aspdf/elvira\\_itp&%23039%3Bs%20blog-Karakteristik%20mutu%20daging.pdf](http://achamad.staff.ipb.ac.id/wpcontent/plugins/aspdf/elvira_itp&%23039%3Bs%20blog-Karakteristik%20mutu%20daging.pdf) (18 Desember 2019)
- Talukder, S. and D.P. Sharma. 2010. Development of Dietary Fiber Rich Chicken Meat Patties Using Wheat and Oat Bran, *Journal of Food Science and Technology*. 4:224-229.
- Tamalludin, F. 2014. *Panduan Lengkap Ayam Broiler*. Tasikmalaya: Penebar Swadaya Group. 23-24.
- The Vegetarian Society of the United Kingdom Limited. 2019. *Broiler Chickens*. <https://www.vegsoc.org/info-hub/why-go-veggie/animals/broiler-chickens/> (26 Juli 2019)
- Triwitono, P., Suparmo, dan Z. Noor. 1999. Sifat dan Potensi Serat Pangan pada “Gudeg-Kering”, *AgriTech*. 19(2):83-85.
- Tiwari, U. and E. Cummins. 2011. *Pulse Foods: Processing, Quality, and Nutraceutical Applications*. New York: Elsevier Inc. 138-143.
- Toldra, F. 2010. *Handbook of Meat Processing*. Iowa: Blackwell Publishing. 406-408.
- Tornberg, E. 2005. Effects of Heat on Meat Proteins-Implications on Structure and Quality of Meat Products, *Meat Science*. 70(3):493-508.
- Trinh, K.T. and S.Glasgow. 2012. On The Texture Analysis Test, *Chemeca 2012: Quality of Life Through Chemical Engineering*, 23-26 September, Wellington, New Zealand.
- Wahyudi, A. dan R. Dewi. 2017. Upaya Perbaikan Kualitas Produksi Buah Menggunakan Teknologi Budidaya Sistem ToPAS pada 12 Varietas Semangka Hibrida, *Jurnal Penelitian Pertanian*, 17(1):17-25.
- Wideman, N., C.A. Obryan, and P.G. Crandall. 2016. Factors Affecting Poultry Meat Colour and Consumer Preferences-A Review, *World's Poultry Science Journal*. 72:353-366.
- Widyastuti, E.S., A.S. Widati, R.D. Hanjariyanto, dan M.Y. Avianto. 2010. Kualitas *Nugget* Ayam dengan Penambahan Keju Gouda, *Jurnal Ilmu dan Teknologi Hasil Ternak*. 5(1):1-10

- Winarno, F.G. 2002. *Kimia Pangan dan Gizi*. Jakarta: PT Gramedia Pustaka Utama. 10-11, 28-32, 225.
- Yadav, D.N. and A. Rajan. 2012. Fibres as An Additive for Oil Reduciton in Deep Fried *Poori*, *Journal of Food Science and Technology*. 49(6):767-773.
- Yahya, E., T.I.P. Suseno, and E. Setijawati. 2013. Pengaruh Penambahan Tepung Menjes terhadap Sifat Fisik dan Organoleptik *Nugget Ayam*, *Jurnal Teknologi Pangan dan Gizi*. 12(2):63-68.
- Young, R.L. 1982. The Adequacy of Recommended Microwave Blanch Times for Carrots and Green Beans in Selected Microwave Ovens, *Thesis*, Faculty of Human Nutrition and Foods, Virginia Polytechnic Institute and State University, Blacksburg. 6-22.
- Youssef, M.K. and S. Barbut. 2011. Effects of Two Types of Soy Protein Isolates, Native, and Preheated Whey Protein Isolates on Emulsified Meat Batters Prepared at Different Protein Levels, *Meat Science*. 87:54-60.
- Zayas, J.F. 1997. *Functionality of Proteins in Food*. Berlin: Springer Science+Business Media. 228-229.