

BAB V **KESIMPULAN**

5.1. Kesimpulan

1. Perbedaan jenis minyak berpengaruh nyata terhadap *juiciness*, namun tidak berpengaruh nyata terhadap warna, tekstur, dan A_w .
2. Perbedaan konsentrasi minyak yang tersarang pada jenis minyak berpengaruh nyata terhadap *lightness*, *juiciness*, A_w , dan *hardness*, namun tidak berpengaruh nyata terhadap *redness*, *yellowness*, *chroma*, derajat *hue*, *springiness*, dan *cohesiveness*.
3. Penambahan konsentrasi minyak yang semakin tinggi meningkatkan nilai *juiciness* dan cenderung meningkatkan nilai *hardness*, tetapi menurunkan nilai A_w , *springiness*, dan *cohesiveness*.
4. Berdasarkan pengujian organoleptik terhadap parameter warna, tekstur, dan flavor, didapatkan perlakuan terbaik adalah daging tiruan dengan penambahan minyak kelapa 5%, dengan nilai *lightness* 55,98, *redness* 4,15, *yellowness* 16,24, *chroma* 16,88, *hue* 74,36, *juiciness* 0,23%, *hardness* 1683,450 gram, *springiness* 0,905, *cohesiveness* 0,630, dan A_w 0,964.

5.2. Saran

Daging tiruan tepung gluten – ubi jalar putih dengan penambahan minyak yang dihasilkan memiliki tingkat kesukaan terhadap tekstur yang kurang disukai karena memiliki tekstur yang terlalu berminyak. Oleh karena itu perlu dilakukan penelitian lebih lanjut dengan penggunaan konsentrasi minyak yang lebih rendah agar dapat menghasilkan daging tiruan yang tidak berminyak dan lebih disukai. Selain itu, daging tiruan dapat ditingkatkan dalam segi warna karena daging tiruan dengan penambahan minyak yang

dihasilkan kurang menyerupai daging sapi. Penambahan pewarna pada daging tiruan perlu mempertimbangkan rasa yang akan dihasilkan.

DAFTAR PUSTAKA

- Afrila, A., dan F. Jaya. 2012. Keempukan, pH, dan Aktivitas Air (Aw) Dendeng Sapi Pada Berbagai Konsentrasi Ekstrak Jahe (*Zingiber officinale Roscoe*) dan Lama Perendaman Berbeda, *Jurnal Ilmu dan Teknologi Hasil Ternak* 7(2):6-12.
- Aggraini, L., W. Lestariana dan Susetyowati. 2015. Asupan Gizi dan Status Gizi Vegetarian pada Komunitas Vegetarian di Yogyakarta. *Jurnal Gizi Klinik Indonesia* 11(4):143-149.
- AOAC, 1990. *Official Methods of Analysis 13th Edition*. Washington DC: Association of Analytical Chemist.
- AOAC. 1984. *Official Method of Analysis*. Washington DC: Association of Analytical Chemist.
- Arellano, D.B., A.P.D. Ribeiro, S.O.S. Saldivar. 2019. Corn Oil: Composition, Processing, and Utilization (dalam *Corn Chemistry and Technology 3rd*, Sergio O.S.S., Ed.), UK: Elsevier AACC International, 593-613.
- Asgar, M.A., A. Fazilah, N. Huda, R. Bhat, A.A. Karim, 2010. Nonmeat Protein Alternatives as Meat Extenders and Meat Analogs, *Institute of Food Technologist* 9:513-529.
- Badan Pusat Statistik Indonesia. 2020. *Produksi Daging Sapi di Indonesia 2009-2019*. <https://www.bps.go.id/linkTableDinamis/view/id/1038> (2 April 2020).
- Badan Pusat Statistik Indonesia. 2020. *Rata-Rata Konsumsi per Kapita Seminggu Beberapa Macam Bahan Makanan Penting 2007-2018*. <https://www.bps.go.id/statictable/2014/09/08/950/rata-rata-konsumsi-per-kapita-seminggu-beberapa-macam-bahan-makanan-penting-2007-2018.html> (1 April 2020).
- Badan Standarisasi Nasional. SNI 01-3394-1998: *Minyak Jagung*. <https://docplayer.info/33978006-Minyak-jagung-sebagai-minyak-makan.html>. (23 Agustus 2020).
- Barbut, S., A. Marangoni. 2018. Organogels Use in Meat Processing – Effects of Fat/Oil Type and Heating Rate, *Meat Science* <https://doi.org/10.1016/j.meatsci.2018.11.003>.

- Bohrer, B.M. 2019. An Investigation of The Formulation and Nutrntional Composition of Modern Meat Analogue Products, *Food Science and Human Wellness* 8(4):320-329.
- Cuq, B., F. Boutrot, A. Redi, V.L. Pellerin. 2000. Study of The Temperature Effect on The Formation of Wheat Gluten Network: Influence on Mechanical Properties and Protein Solubility, *Journal of Agricultural and Food Chemistry* 48(7):2954-2959.
- Day, L. 2011. Wheat Gluten: Production, Properties, and Application (dalam *Handbook of Food Proteins*, G.O. Phillips and P.A. Williams, Ed.), UK: Woodhead Publishing Limited, 2011, 267-288.
- Dekkers, B.L. 2018. Creation of Fibrous Plant Protein Foods. *Thesis*, Advanced Studies in Food Technology, Agrobiotechnology, Nutrition and Health Sciences, Wageningen University, Netherlands.
- Dekkers, B.L., R.M. Boom, A.J. van der Goot. 2018. Structuring Processes for Meat Analogues, *Trends in Food Science and Technology*, doi:10.1016/j.tifs.2018.08.011.
- Dinata, I Kadek Agus Hendra. 2014. Daging Artifisial Tinggi Zat Besi sebagai Alternatif Pangan Vegetarian Pencegah Anemia, *Skripsi S-1*, Fakultas Ekologi Manusia, Institut Pertanian Bogor, Bogor.
- Duclairoir, C., A.M. Orechchioni, P. Depraetere, E. Nakache. 2002. A-Tocopherol Encapsulation and In Vitr Release from Wheat Gliadin Nanoparticles, *Journal of Microencapsulation* 19(1):53-60.
- Dumancas, G. 2012. Replacing Animal Fats with Vegetable Oils in Meat Products, *American Oil Chemists Society (AOCS) Inform* 23(3): 168-171.
- Dwiputra, D., A.N. Jagat, F.K. Wulandari, A.S. Prakarsa, D.A. Puspaningrum, F. Islamiyah. 2015. Minyak Jagung Alternatif Pengganti Minyak yang Sehat, *Jurnal Aplikasi Teknologi Pangan* 4(2):5-6.
- Egbert, R. and C. Borders. 2006. Achieving Success with Meat Analogs. *Journal of Food Technology* 60:28-34.
- Estiasih, T. 2018. Analisis Fisik Lainnya, Universitas Brawijaya, <http://tetiestiasih.lecture.ub.ac.id/files/2018/04/Analisis-Fisik-yang-Lain.pdf> (6 April 2020).
- Estiasih, T., W.D.R. Putri, E. Wazziroh. 2017. *Umbi-Umbian dan Pengolahannya*. Malang: UB Press. Halaman 5, 71-74.

- Feng, W. S. Ma, X. Wang. 2020. Quality Deterioration and Improvement of Wheat Gluten Protein in Frozen Dough, *Grain and Oil Science and Technology* 3:29-37.
- Gaspersz, V. 1991. *Metode Perancangan Percobaan*. Bandung: Armico. Halaman 456-467.
- Glen, J. 2012. Sifat Fisik dan Mikrobiologi Sosis Frankfurter dengan Tambahan Rosela dan Angkak, *Skripsi S-1*, Fakultas Peternakan, Institut Pertanian Bogor, Bogor.
- Gopala, A.G.K., G. Raj, A.S. Bhatnagar, P.K.P. Kumar, P. Chandrashekhar. 2010. Coconut Oil: Chemistry, Production, and Its Application, *Indian Coconut Journal*, Department of Lipid Science and Traditional Foods, Central Food Technology Research Institute, 15-27.
- Guerrieri, N. and M. Cavalletto. 2018. Cereals Proteins (dalam *Proteins in Food Processing 2nd*, R.Y. Yada, Ed.), UK: Elsevier, 223-244.
- Gujral, H.S., A. Kaur, N. Singh, N.S. Sodhi. 2002. Effect of Liquid Whole Egg, Fat, and Textured Soy Protein on The Textural and Cooking Properties of Raw and Baked Patties from Goat Meat, *Journal of Food Engineering* 53(4):377-385.
- Halim, Y., Natania, J.M. Halim, L.C. Sordirga, L.A. Yakhin. 2016. Physical and Chemical Characteristics of Frying Oil in Indonesia in A Repeated Frying Model, *Journal of Chemical and Pharmaceutical Research* 8(3):583-589.
- Hambraeus, L. 2014. Protein and Amino Acids in Human Nutritions, *Reference Module in Biomedical Sciences* 3 ed., 1-13.
- Heer, K. and S. Sharma. 2017. Microbial Pigments As A Natural Color, *International Journal of Pharmaceutical Sciences and Research* 8(5):1913-1922.
- Hsieh, Y.H.P., S. Pao. And J. Li. 2008. Traditional Chinese Fermented Food (dalam *Handbook of Fermented Functional Foods Second Edition*, E.R. Farnworth, Ed.), Boca Raton: CRC Press.
- <https://www.nixsensor.com/free-color-converter/>.
- Hutching, J. B. 1999. Food Colour and Appearance. US: Springer.
- Indiarto, R., B. Nurhadi, E. Subroto. 2012. Kajian Karakteristik Tekstur (*Texture Profile Analysis*) dan Organoleptik Daging Ayam Asam Berbasis Teknologi Asap Cair Tempurung Kelapa, *Jurnal Teknologi Hasil Pertanian* 5(2):106-116.

- Indrati, R. dan M. Gardjito. 2013. *Pendidikan Konsumsi Pangan: Aspek Pengolahan dan Keamanan*. Jakarta: Kencana. Halaman 15-17.
- Jacob, J. and K. Leelavathi. 2007. Effect of Fat Type on Cookie Dough and Cookie Quality, *Journal of Food Engineering* 79:299-305.
- Jiang, X.L., T. Ji-Chun, H. Zhi, Z. Wei-Dong. 2008. Protein Content and Amino Acid Composition in Grains of Wheat-Related Species, *Agricultural Sciences in China* 7(3):272-279.
- Joshi, V.K. and S. Kumar. 2015. Meat Analogues: Plant Based Alternatives to Meat Products, *International Journal of Food and Fermentation Technology* 5(2):107-119.
- Juvera, G.C., F.A. Vazquez-Ortiz, M.I. Grijalva-Haro. 2013. Amino Acid Composition, Score, and *In Vitro* Protein Digestibility of Foods Commonly Consumed in Northwest Mexico, *Nutricion Hospitalaria* 28(2): 365-371.
- Kalac, P. 2016. Proximate Composition and Nutrients (dalam *Edible Mushroom*, P. Kalac) Academic Press: Czech, 7-69.
- Karouw, S. dan B. Santosa. 2014. Minyak Kelapa Sebagai Sumber Asam Lemak Rantai Medium, *Prosiding Konferensi Nasional Kelapa VIII*, Jambi 21-22, 73-78.
- Karouw, S., Suparmo, P. Hastuti, T. Utami. 2013. Sintesis Ester Metil Rantai Medium dari Minyak Kelapa dengan Cara Metanolisis Kimiai, *Agritech* 33(2):182-188.
- Kaushik, R., N. Sharma, N. Swami, M. Sihag, A. Goyal, P. Chawla, A. Kumar, A. Pawar. 2013. Physico-Chemical Properties, Extraction and Characterization of Gluten from Different Indian Wheat Cultivars, *Research and Review: A Journal of Crop Science and Technology* 2(2):37-42.
- Kementerian Kesehatan Republik Indonesia. 2018. *Kandungan Lemak dan Kolesterol dalam 100 gram Bahan Makanan Daging Ayam, Daging Kambing dan Daging Sapi*. <http://www.p2ptm.kemkes.go.id/infographic-p2ptm/hipertensi-penyakit-jantung-dan-pembuluh-darah/page/27/kandungan-lemak-dan-kolesterol-dalam-100-gr-bahan-makanan-daging-ayam-daging-kambing-dan-daging-sapi> (2 April 2020).
- Komariah, S. dan D. Purnomo. 2008. *Aneka Olahan Daging Sapi*. Jakarta: Agromedia. Halaman 3-6.
- Konica Minolta. 2007. *Komunikasi Warna Presisi*. Konika Sensing Inc.

- Kumar, P. N. Mehta, O.P. Malav, A.K. Verma, P. Umraw, M.K. Kanth. 2018. The Structure of Meat Analogs, *Reference Module in Food Science*, doi :10.1016/b978-0-08-100596-5.21705-8.
- Kun, L.Y. 2006. *Microbiological Biotechnology 2nd Edition Principles and Application*. USA: World Scientific Publishing Co. Pte. Ltd. Halaman 370.
- Kyriakopoulou, K., B. Dekkers, A.J. van der Goot. 2019. Plant Based Meat Analogues (dalam *Sustainable Meat Production and Processing*, C.M. Galankis, Ed.) Elsevier: Academic Press, 103-126.
- Lewicki, PP., J.A. Arboix, P.G. Boto, J.C. Beringues, I.M. Moreno. 2014. Drying (dalam *Encyclopedia of Meat Science*, 2nd ed., M. Dikeman dan C. Devine, Eds.). UK: Academic Press. Halaman 472.
- Lindriati, T., Herlina, J.N. Emania. 2018. Sifat Fisik Daging Analog Berbahan Dasar Campuran Tepung Porang (*Amorphophallus oncophyllus*) dan Isolat Protein Kedelai, *Jurnal Teknologi Pertanian Andalas* 22(2):175-186.
- Lutfika, E. 2006. Evaluasi Mutu Gizi dan Indeks Glikemik Produk Olahan Panggang Berbahan Dasar Tepung Ubi Jalar (*Ipomoea batatas* L.) Klon Unggul BB00105.10, *Skripsi S-1*, Fakultas Teknologi Pertanian. Institut Pertanian Bogor, Bogor.
- Makfoeld, D., D.W. Marseno, P. Hastuti, S. Anggrahini, S. Raharjo, S. Sastrosuwignyo, Suhardi, S. Martoharsono, S. Hadiwiyoto, Tranggono. 2002. *Kamus Istilah Pangan dan Nutrisi*. Yogyakarta: Kanisius. Halaman 157.
- Mal'a, P., M. Baranova, D. Marcincakova, J. Nagy. 2010. Organoleptic Evaluation of Poultry Meat Products with Wheat Protein- Seitan, Coloured by Microbial Natural Pigment, *Assam University Journal of Science and Technology: Biological and Environmental Sciences* 5(1):1-5.
- Malav, O.P, S. Talukder, P. Gokulakrishnan, S. Chand. 2013. Meat Analog: A Review, *Critical Reviews in Food Science and Nutrition* 55(9):1241-1245.
- Mamat, H. and S.E. Hill. 2014. Effect of Fat Types on The Structural and Textural Properties of Dough and Semi Sweet Biscuit, *Journal Food Sciences Technology* 51(9):1998-2005.

- Manley, D. 2000. Wheat Flour and Vital Wheat Gluten (dalam *Technology of Biscuits, Crackers and Cookies 3rd*, D. Manley, Ed.). England: Woodhead Publishing, 81-103.
- Marten, B., M. Pfeuffer, J. Schrezenmeir. 2006. Medium Chain Triglycerides: Review, *International Dairy Journal* 16:1374-1382.
- Mejri, M. B. Roge, A. BenSouissi, F. Michels, M. Mathlouthi. 2005. Effects of Some Additives on Wheat Gluten Solubility: A Structural Approach, *Food Chemistry* 92:7-15.
- Merrick, R. 2004. Shelf Stabel Meat Analogues Comprising Glycerol and Glucose, *Australia, International Application Published Under the Patent Cooperation Treaty*, WO 2004/016097 A1, 26 Februari 2014.
- Mohamed, A., S.H. Gordon, R.E.H. O'Kuru, D.E. Palmquist. 2005. Phospholipids and Wheat Gluten Blends: Interaction and Kinetics, *Journal of Cereal Science* 41:259-265.
- Moreau, R.A., D.B. Johnston, K.B. Hicks. 2007. A Comparison of The Levels of Leutin and Zeaxanthin in Corn Germ Oil, Corn Fiber Oil, and Corn Kernel Oil, *Journal of The American Oil Chemist' Society* 84(11):1039-1044.
- Moskowitz, H.R., B. Drake, Akesson. 1972. Phychophysical Measures of Texture, *Journal of Texture Studies* 3(2):135-145.
- Muchtadi, T.R., Sugiyono, F. Ayustaningwarno. 2016. *Ilmu Pengetahuan Bahan Pangan*. Bandung: Alfabeta. Halaman 2-32.
- Naufalin, R. 2018. *Mikrobiologi Pangan*. Yogyakarta: Plantaxia. Halaman 93-99.
- Nurhartadi, E., C. Anam, D. Ishartani, N.H. Parnanto, R.A. Laily dan N. Suminar. 2014. Meat Analog dari Protein Curd Kacang Merah (*Phaseolus vulgaris L*) dengan Tepung Biji Kecipir (*Psophocarpus tetragonolobus*) sebagai Bahan Pengisi: Sifat Fisikokimis. *Jurnal Teknologi Hasil Pertanian* 7(1):12-19.
- O'Brien, R.D. 2004. *Fats and Oils: Formulating and Processing for Application*. Boca Raton: CRC Press. Halaman 575.
- OECD (2020), Crop production (indicator). doi: 10.1787/49a4e677-en (Accessed on 01 April 2020).
- OECD (2020), Meat consumption (indicator). doi: 10.1787/fa290fd0-en (Accessed on 01 April 2020).

- Pham, L.J. 2016. Coconut (*Cocos nucifera*) (dalam *Industrial Oil Crops*, T.A. McKeon, D.G. Hayes, D,F, Hildebrand, R.J. Weselake, Ed.), UK: Elsevier, 231-242.
- Planck, N. 2006. *Real Food*, penerjemah Word Translation Service. Yogyakarta: B-First. Halaman 174-177.
- Prasetya, H.N. 2017. Interaksi Glutenin dan Betalain Ditinjau dari Aspek Molekuler Adonan Disuplementasi Bit Merah (*Beta Vulgaris* L), *Seminar Nasional dan Gelar Produk* 2, 17-18 Oktober 2017.
- Prasetyaningsih, Y., M.W. Sari, N. Ekawandani. 2018. Pengaruh Suhu Pengeringan dan Laju Alir Udara terhadap Analisis Proksimat Penyedap Rasa Alami Berbahan Dasar Jamur untuk Aplikasi Makanan Sehat (Batagor), *Eksbergi* 15(2):41-47.
- Prijambodo, O.M., C.Y. Trisnawati, A.M. Sutedja. 2014. Karakteristik Fisikokimia dan Organoleptik Sosis Ayam dengan Proporsi Kacang Merah Kukus dan Minyak Kelapa Sawit, *Jurnal Teknologi Pangan dan Gizi* 13(1):6-11.
- Puspita, Putri Gita. 2014. Daya Terima Konsumen dan Kandungan Gizi Daging Analog Berbasis Tepung Gluten dan Tepung Ubi Jalar yang Difortifikasi Zat Besi, *Skripsi S-1*, Fakultas Ekologi Manusia, Institut Pertanian Bogor, Bogor.
- Puspitadewi, S.R.D., I. Srianta, N. Kusumawati. 2016. Pola Produksi Pigmen *Monascus* Oleh *Monascus sp.* KJR2 pada Media Biji Durian Varietas Petruk Melalui Fermentasi Padat, *Journal of Food Technology and Nutrition* 15(1):36-42.
- Putra, A.A., N. Huda, R. Ahmad. 2011. Changes During the Processing of Duck Meatballs Using Different Fillers after the Preheating and Heating Process, *International Journal of Poultry Science* 10(1):62-70.
- Rajarathnam, S., and M.N. Sashirekha. 2003. Mushroom and Truffles: Use of Wild Mushroom (dalam *Encyclopedia of Food Sciences and Nutrition*, B. Caballero, L. Trugo, P.M. Finglas, Eds.), Academic Press: USA, Second ed., 4048-4054.
- Ridho, Muhammad dan A.A. Maran. 2017. Prarencana Pabrik Minyak Jagung dengan Ekstraksi Superkritis Kapasitas Produksi 2500 ton/tahun, *Skripsi S-1*, Fakultas Teknik, Universitas Katolik Widya Mandala Surabaya, Surabaya.

- Ristiarini, S., M.N. Cahyono, J. Widada, E.S. Rahayu. 2018. Pengaruh Penambahan Laurat dan Glisin terhadap Nilai Warna dan Kadar Sitrinin Angkak, *Agritech* 38(3):320-329.
- Rukmana, H.R. 1997. *Ubi Jalar: Budi Daya dan Pascapanen*. Yogyakarta: Kanisius. Halaman 11-20.
- Saidin, Muhamad. 2000. Kandungan Kolesterol dalam Berbagai Bahan Makanan Hewani, *Buletin Penelitian Kesehatan* 27(2):224-230.
- Samard, S. and G.H. Ryu. 2018. A Comparison of Physicochemical Characteristic, Texture, and Strucutre of Meat Analogue and Meat, *Journal Science Food Agricultural* 99:2708-2715.
- Santosa, I. dan E. Sulistiawati. 2017. Optimasi Proses Pengeringan Cara Sangrai pada Pembuatan Tepung Ubi Jalar dengan Suhu Terkendali, *Chemica* 4(2):53-57.
- Santosa, I., A.P. Winata, E. Sulistiawati. 2016. Kajian Sifat Kimia dan Uji Sensori Tepung Ubi Jalar Putih Hasil Pengeringan Cara Sangrai, *Chemica* 3(2):55-60.
- Sastrahidayat, I.R. 2017. *Penyakit Pada Tanaman Ubi-Ubian*. Malang: UB Press. Halaman 33-38.
- Setyaningsih, D., A. A. Priyantono, M.P. Sari. 2010. *Analisis Sensori untuk Industri Pangan dan Agro*. Bogor: IPB Press. Halaman 59-60.
- Silvas-Gracia, M.I., B. Ramirez-Wong, P.I. Torres-Chavez, E. Carvajal-Millan, J.M. Barron-Hoyos, L.A. Bello-Perez, A. Quintero-Ramos. 2014. Effect of Freezing Rate and Storage Time on Gluten Protein Solubility, and Dough and Bread Properties, *Journal of Food Process Engineering*, 37(3):237-247.
- Singgih, M., N. Azizah, S. Priatni. 2016. Inoculums Preparation and Detoxofocation Process in *Monascus* Fermented Rice Production, *Journal of Tropical Life Science* 6(3):170-175.
- Subroto, M.A. 2008, *Real Food True Health*. Jakarta: AgroMedia Pustaka. Halaman 94-101.
- Sugiyono. 2004. *Kimia Pangan*. Yogyakarta: Universitas Negeri Yogyakarta.
- Suprapti, L. 2003. *Tepung Ubi Jalar: Pembuatan dan Pemanfaatannya*. Yogyakarta: Kanisius. Halaman 18-22, 36-37.
- Suprapti, M.L. 2003. *Tepung Ubi Jalar: Pembuatan dan Pemanfaatannya*. Yogyakarta: Kanisius. Halaman 18-22, 36-37.

- 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.
- Utama, A.N. 2016. Substitusi Isolat Protein Kedelai pada Daging Analog Kacang Merah (*Phaseolus vulgaris L.*), *Artikel Penelitian*, Fakultas Kedokteran, Universitas Diponegoro, Semarang.
- Wang, R., W. Zhou, H.H. Yu, W.F. Chow. 2006. Effects of Green Tea Extract on The Quality of Bread Made From Unfrozen and Frozen Dough Processes, *Journal of The Sciences of Food and Agriculture* 86(6):857-864.
- Wardani, N.A.K. dan S.B. Widjanarko. 2013. Potensi Jamur Tiram (*Pleurotus ostreatus*) dan Gluten dalam Pembuatan Daging Tiruan Tinggi Serat, *Jurnal Teknologi Pertanian* 14(3):151-164.
- Wi, G., J. Bae, H. Kim, Y. Cho, M.J. Choi. 2020. Evaluation of The Physicochemical and Structural Properties and The Sensory Characteristics of Meat Analogues Prepared with Various Non-Animal Based Liquid Additives, *Article Foods* 2020 461. <https://www.mdpi.com/2304-8158/9/4/461>.
- Widyastuti, N., D. Tjokrokusumo, R. Giarni. 2015. Potensi Beberapa Jamur Basidiomycota Sebagai Bumbu Penyedap Alternatif Masa Depan, *Prosiding Seminar Agroindustri dan Lokakarya Nasional FKPT-TPI*, Tangerang 2-3, 52-60.
- Youssef, M.K., S. Barbut. 2009. Effects of Protein Level and Fat/Oils on Emulsion Stability, Texture, Microstructure and Color of Meat Batters, *Meat Sciences* 82(2):228-233.
- Yuliarti, O., T.J.K. Kovis, N.J. Yi. 2020. Structuring The Meat Analogue by Using Plant-Based Derived Composites, *Journal of Food Engineering* 110138.
- Yusniardi, E., B. Kanetro, A. Slamet. 2010. Pengaruh Jumlah Lemak Terhadap Sifat Fisik dan Kesukaan Meat Analog Protein Kecambah Kacang Tunggak (*Vigna unguiculata*), *Agritech* 30(3):148-151.
- Zhai, S.R., Albritton. 2020. Airborne Particles From Cooking Oils: Emission Test and Analysis on Chemical and Health Implications, *Sustainable Cities and Society* 52:1-7.
- Zhao, L., L. Li, G.Q. Liu, L. Chen, X. Liu, J. Zhu, B. Li. 2013. Effect of Freeze-Thaw Cycles on The Molecular weight and Size Distribution of Gluten, *Food Research International* 53(1):409-416.

Zilic, S., M. Barac, M. Pesic, D. Dodig, D.I. Micic. 2011. Characterization of Protein from Grain of Different Bread and Durum Wheat Genotypes, *International Journal of Molecular Sciences* 12(9):5878-5894.