

BAB V

KESIMPULAN DAN SARAN

5.1. Kesimpulan

1. Hasil penelitian menunjukkan adanya pengaruh nyata perbedaan proporsi maizena dan hasil samping kopi terhadap sifat fisikokimia dan organoleptik dari *cookies gluten-free*.
2. Perlakuan terbaik terdapat pada proporsi maizena dan hasil samping kopi masing-masing sebanyak 80:20, dengan nilai kadar air sebesar 3,76 %, nilai daya patah sebesar 6,06 N, nilai kekerasan sebesar 6,22 N, dan kisaran warna 53,81 °*hue*.
3. Nilai kadar air *cookies gluten-free* berkisar antara 2,44-4,43 %. Semakin tinggi proporsi maizena maka kadar air juga semakin tinggi.
4. Nilai *hue* pada *cookies gluten-free* berkisar antara 49,56-56,6 °*hue*. Nilai tersebut termasuk golongan warna merah berdasarkan tabel *hue*.
5. Nilai tekstur pada *cookies gluten-free* berkisar antara 4,3-9,4 N. Semakin tinggi proporsi maizena yang ditambahkan maka nilai daya patah dan kekerasan semakin rendah.
6. *Cookies gluten-free* termasuk dalam golongan biskuit tinggi serat pangan, dengan komponen serat pangan total sebanyak 9,16 %.

5.2. Saran

Perlu penelitian lebih lanjut mengenai penerimaan *cookies gluten-free* bagi penderita *celiac disease*.

DAFTAR PUSTAKA

- Afriliana, A. 2018. *Teknologi Pengolahan Kopi Terkini*. Yogyakarta: Deepublish.
- Anggraeni, A. A., Titin, H. W. H., dan Sri, P. 2017. Physical and Sensory Properties of Gluten-Free Modified Cassava Flour-Based Cookies, *The 7th International Seminar on Tropical Animal Production*, Yogyakarta, 12-14 September 2017.
- AOAC, I. 1990. *AOAC: Official Methods of Analysis*. Arlington: Association of Official Analytical Chemists, Inc.
- AOAC, I. 2005. *AOAC: Official Methods of Analysis*. Arlington: Association of Official Analytical Chemists, Inc.
- Ashokkumar, Y. 2018. *Textbook of Bakery and Confectionery (Second Edition)*. Delhi: PHI Learning Private Ltd.
- Bae, C.-H., Park, G.-H., Kang, W.-W., Park, H.-D., P. 2013. Quality Characteristics of Cookies Added With RS4 Type Resistant Corn Starch, *Korean Journal Food Preservation*. 20(4): 539-545.
- Badan Pengawas Obat dan Makanan. 2004. *Ketentuan Pokok Pengawasan Suplemen Makanan*.
https://jdih.pom.go.id/produk/keputusan20kepala20bpom/40_2004_NOMOR20HK.00.05.23.3644202004_pangan.pdf (14 Juli 2020)
- Badan Pengawas Obat dan Makanan. 2011. *Pengawasan Klaim Dalam Label dan Iklan Pangan Produk Olahan*.
ditjenpp.kemenkumham.go.id/arsip/bn/2012/bn18-2012lamp.pdf (19 November 2020).
- Badan Standarisasi Nasional. 2011. *SNI 2973:2011:Biskuit*.
<https://kupdf.net.queue/biskuit-sni-2011-pdf> (10 September 2019).
- Badan Standarisasi Nasional. 2011. *SNI 01-3727-1995: Maizena*.
<http://sispk.bsn.go.id/SNI/DetailSNI/4129> (10 September 2019).
- Ballesteros, L.F., Teixeira, J.A. & Mussatto, S.I. 2014. Chemical, Functional, and Structural Properties of Spent Coffee Grounds and Coffee Silverskin. *Food and Bioprocess Technology*, 7(12): 3493–3503.

- Bower, S. L., Mary, K. S., Steve, P., 2014. *Celiac Disease: A Guide To Living With Gluten Intolerance (Second Edition)*. New York: Demos Medical Publishing, LLC.
- Carillo, E. P., Alicia, F. E., Karla, G. M., *et al.* 2017. *Effect of Maize Starch Substitution on Physicochemical and Sensory Attributes of Gluten-Free Cookies Produced from Nixtamalized Flour*. <https://doi.org/10.1155/2017/6365182> (11 September 2019).
- Cauvain, S.P. & Linda, S.Y. 2008. *Bakery Food Manufacture and Quality: Water Control and Effects*. UK: John Wiley & Sons, Ltd., Publication.
- Chakrabarti, M.M. 2003. *Chemistry and Technology of Oils & Fats*. New Delhi: Allied Publishers PVT. LTD.
- Chakrabarti, T., Amrita, P., and Anil, K. C. 2017. Process Optimization Of Gluten-free Cookies Using Cassava Flour, *International Journal of Food Science and Nutrition*. 2(5):190-195.
- Chung, H.-J., Cho, A., & Lim, S.-T. 2014. Utilization of Germinated and heat-Moisture Treated Brown Rices in Sugar-snap Cookies, *LWT-Food Science and Technology*. 57(1):260-266
- Corn Refiners Assciation (CRA). 2006. *Corn Starch*. <https://corn.org/wp-content/uploads/2009/12/Starch2006.pdf> (13 September 2019)
- Davids, K. 2013. *Espresso: Ultimate Coffee, Second Edition*. New York: St. Martin's Press.
- Davidson, I. 2018. *Biscuit, Cookie and Cracker Production: Process, Production and Packaging Equipment*. London: Elsevier Inc.
- DeMan JM. 1985. *Principles of Food Chemistry*. Conecticut: The AVI Publishing Company Inc.
- Diniyah, N., Fatimah, W., Achmad, S. 2019. Karakteristik Tepung Premiks Berbahan MOCAF (*Modified Cassava Flour*) dan Maizena Pada Pembuatan *Cookies Green Tea*, *Jurnal Pangan dan Agroindustri*. 7(3): 25-36.
- Eliasson, A. C. 2004. *Starch in Food: Structure, Function and Applications*. New York: CRC Press.
- Enrique, O.R., (Eds). 2012. *Non-thermal Food Engineering Operations*. New York: Springer Science Business Media, LLC.

- Farah, A. 2019. *Coffee: Production, Quality and Chemistry*. London: Royal Society of Chemistry.
- Figura, O.L. & Arthur, A.T. 2007. *Food Physics: Physical Properties – Measurement and Applications*. Berlin: Springer Sci. and Business Media
- Grodner, M., Sylvia, E. S., Suzanne, D. 2020. *Nutritional Foundations and Clinical Applications: A Nursing Approach 7th Edition*. Beijing: Elsevier.
- Hasenhuettl, G.L. & Hartel, R.W. 2008. *Food Emulsifiers and Their Applications*. Second Edi. New York: Springer Science & Business Media.
- Hendriyana, A. 2015. Analisis Tekstur Penting dalam Industri Pangan, *Seminar of Food Processing Engineering “Improving Knowledge on Texture Analysis Sample Preparation, Probe Selection, and Data Interpretation”*, Jatinangor, 15 September 2015.
- Hootman, R.C. 1992. *Manual on Descriptive Analysis Testing for Sensory Evaluation*. Philadelphia: American Society for Testing and Materials.
- Hosking, R., (Ed.). 2010. *Food and Language: Proceedings of The Oxford Symposium on Food and Cooking*. London: Prospect Books.
- Hutching, J. 1999. *Food Color and Appearance*. Maryland: Aspen Publisher.
- International Coffee Organization. 2016. *The State of The Global Coffee Trade*. [http://www.ico.org/monthly coffee trade stats.asp](http://www.ico.org/monthly%20coffee%20trade%20stats.asp) (29 Agustus 2019).
- John, S. & Jenifer, J.D. 2007. *Essentials of Nutrition and Dietetics for Nursing*. New Delhi: B.I. Publications Pvt. Limited.
- Johry, P., Samsher, Singh, G. R., Singh, B. R., Vaishali, and Suresh, C. 2016. Development of Cookies From Potato Flour and Their Quality Evaluation, *South Asian J. Food Technol. Environ.* 2(1)309-312.
- Kementerian Kesehatan Republik Indonesia. 2018. *Data Komposisi Pangan Indonesia: Maizena*. <http://www.panganku.org/id-ID/view> (04 November 2020)

- Kementerian Pertanian Republik Indonesia. 2019. *Katalog Pusat Data dan Sistem Informasi Pertanian (Pusdatin) 2014*. http://epublikasi.setjen.pertanian.go.id/epublikasi/StatistikPertanian/2018/Konsumsi/Statistik_Konsumsi_Pangan_Tahun_2018/files/assets/basic-html/page124.html (04 September 2019)
- Lawless, H.T. dan Hildegard, H. 2010. *Sensory Evaluation of Food: Principles and Practices*. New York: Springer Science+Business Media, LLC.
- López-Barrera, D.M., Vázquez-Sánchez, K., Loarca-Piña, M.G.F. & Campos-Vega, R. 2016. Spent coffee grounds, an innovative source of colonic fermentable compounds, inhibit inflammatory mediators in vitro. *Food Chemistry*, 212: 282–290.
- Ludwig, I.A., Pedro, M., Luca, C., et al. 2014. Variations in Caffeine and Chlorogenic Acid Contents of Coffees: What Are We Drinking?, *Food Function Journal*. 5:1718:1726.
- Matz, S. A. 2012. *Snack Food Technology*. Berlin: Springer Science & Business Media.
- Muhammad, K. Bolarinwa, I. F. and Lim, P. T. 2019. Quality of Gluten-Free Cookies From Germinated Brown Rice Flour, *Food Research Journal*. 3(3):199-207.
- Nelson, D. L. dan Michael, M. C, (Eds.). 2004. *Lehninger Principles of Biochemistry (Fourth Edition)*. New York: W. H. Freeman & Co.
- Noor, A. A. A., Mohamad, N. A. Y. and Ho, L, H. 2012. Physicochemical and Organoleptic Properties of Cookies Incorporated With Legume Flour, *International Food Research Journal*. 19(4):1539-1543.
- Parker, J.K., Stephen, E., Lisa, M, (Eds.). 2015. *Flavour Development, Analysis and Perception in Food and Beverages*. London: Elsevier.
- Pomeranz, Y. dan Clifton, E. M. 2000. *Food Analysis Theory and Practice (Third Edition)*. Maryland: Aspen Publishers, Inc.
- Rahardjo, P. 2012. *KOPI: Panduan Budi Daya dan Pengolahan Kopi Arabika dan Robusta*. Jakarta: Penebar Swadaya Grup.
- Setyaningsih, D., Apriyantono, A. & Sari, M. 2010. *Analisis Sensoris untuk Industri Pangan dan Agro*. Bogor: IPB Press.

- Seyhun, N., Sumnu, G., Sahin, S. 2003. Effects of Different Emulsifier Types, Fat Contents, and Gum Types on Retardation of Stalling of Microwave-Baked Cakes. *Nahrung*. 47(4): 248-251.
- Steele, R (Ed). 2004. *Understanding and Measuring The Shelf-Life of Food*. North America: CRC Press LLC.
- Subejo, Nur, S. A. A., Hidayatul, M. 2018. *Lima Pilar Kedaulatan Pangan Nusantara*. Yogyakarta: UGM Press.
- Sudarmadji, S., Haryono, B. & Suhardi. 2010. *Prosedur Analisa untuk Bahan Makanan dan Pertanian*. Yogyakarta: Liberty.
- Sumardjo, D.D. 2009. *Pengantar Kimia Buku Panduan Kuliah Mahasiswa Kedokteran*. Jakarta: EGC.
- Supriyadi, D. 2012. Studi Pengaruh Rasio Amilosa-Amilopektin dan Kadar Air Terhadap Kerenyahan dan Kekerasa Model Produk Gorengan, *Skripsi S-1*, Fakultas Teknologi Pertanian IPB, Bogor.
- Trinh, K.T. dan Steve, G. 2012. On The Texture Profile Analysis Test. https://www.researchgate.net/publication/316093466_On_the_texture_profile_analysis_test.pdf (08 Mei 2020)
- Vaclavik, V.A. & Christian, E.W. 2007. *Essentials of Food Science*. Third Edit. New York: Springer New York.
- Wirakusumah, E.S. 2005. *Menikmati Telur*. Jakarta: Gramedia Pustaka Utama.