

BAB V

KESIMPULAN DAN SARAN

5.1. Kesimpulan

1. Penggunaan tepung beras merah dan tepung ubi jalar kuning sebagai bahan baku *flakes* dapat menjadi salah satu alternatif diversifikasi pangan lokal.
2. Perbedaan proporsi tepung beras merah dan tepung ubi jalar kuning berpengaruh terhadap sifat kimia flakes yaitu kadar air, total fenol, aktivitas antioksidan dan total serat.
3. Semakin banyak proporsi tepung ubi jalar kuning meningkatkan total fenol, aktivitas antioksidan namun menurunkan total serat.
4. Proporsi tepung beras merah:tepung ubi jalar kuning 60:40 dan 40:60 menghasilkan kadar air paling tinggi.
5. Flakes dengan proporsi 100% tepung ubi jalar kuning memiliki luas segitiga terbesar yaitu 133,25 dengan kadar air sebesar 4,59%, total fenol dan aktivitas antioksidan tertinggi yaitu sebesar 868,53 mg GAE/100 g bahan dan 64.431% serta total serat sebesar 4,23%..

5.2. Saran

Perlu dilakukan uji organoleptik untuk mengetahui perlakuan yang paling disukai sehingga dapat ditentukan *flakes* yang dapat diproduksi dan dipasarkan dengan baik.

DAFTAR PUSTAKA

- Amic D, Dusanka DA, Beslo D, Trinasjtic. 2003. Structure-radikal scavenging activity relationship of flavonoids. *Croatia Chem Acta* 76:55-61.
- AOAC. 1990. *Official Methods of Analysis of The Association of Official Analytical Chemist*. 25th Ed., Publisher AOAC Inc., US.
- AOAC. 2005. *Official Methods of Analysis of AOAC International*. 18th Ed., Publisher AOAC Inc., USA.
- Arendt dan Zannini. 2013. *Cereal Grains for The Food and Beverage Industries*. Cambridge: Woodhead Publishing Limited.
- Atmarita. 2005. Daftar Komposisi Bahan Makanan (DKBM). Direktorat Gizi Depkes RI.
- Badan Pusat Statistik. 2016. Tabel Produksi Ubi Jalar Tahun 1993-2015. <https://www.bps.go.id/Subjek/view/id/53#subjekViewTab3>. (25 Juli 2016).
- Badan Standarisasi Nasional Indonesia. 1996. SNI 01-4270-1996: Susu Sereal. Jakarta: Badan Standarisasi Nasional Indonesia
- Badan Standarisasi Nasional Indonesia. 1996. SNI 01-4306-1996 Susu Sereal. Jakarta: Badan Standarisasi Nasional Indonesia
- Borah, A., C. L. Mahanta, and D. Kalita. 2015. Quality Attributes of Extruded Breakfast Cereal from Low Amylose Rice and Seeded Banana (*Musa Balbisiana*, ABB), *J. Food Res. Technol.* 3(1):23-33.
- British Nutrition Foundation. 1998. *Cereals*. Nutrition Information Article. <http://frog.kingsbridgecollege.org.uk/frogweb/OldIntranet/departments/technology/nutrition/information/foodandingredients/cereal.html> (13 Maret 2016)
- Buhler. 2013. *Breakfast Cereals: Production from Single Source*. Buhler Group Articles. https://www.buhlergroup.com/china/zh/downloads/Breakfast_Cereals.pdf (21 Maret 2016).

- Chairil, M.M.F. dan L. Kustiyah. 2014. Formulasi Flakes Berbasis Pati Garut dengan Fortifikasi Zat Besi (Fe) untuk Perbaikan Status Besi Remaja Putri, *Jurnal Gizi dan Pangan*. 9(2): 89-96.
- Chrisnasari, Ruth., A. Soesanti., Askitosari, D. 2015. *Pengembangan Bisnis Berbasis Ubi Jalar pada Masyarakat Tamiajeng Trawas, Kabupaten Mojokerto*. Join Confrence on Comdev 2015. Universitas Surabaya.
- CV. Tepung Umbiku. 2016. Proses Penepungan Ubi Jalar Kuning, *komunikasi langsung*
- Drake, D.L., S.E. Gebhardt, and R.H. Matthews. 1989. *Composition of Foods: Cereal Grains and Pasta*. Washington D.C: United States Department of Agriculture.
- Eliasson AC. 2004. *Starch in food : structure, function and applications*. Cambridge: Woodhead Publishing Limited. 1:341-344.
- Fahey, J.W. 2005. Moringa oleifera: A Review of the Medical Evidence for Its Nutritional, Therapeutic, and Prophylactic Properties Part 1. *Trees for Life Journal*, 1 : 5-30. http://www.tfljournal.org/images/articles/20051201124931586_3.pdf (5 Agustus 2016)
- Gibson SA and Gunn P. 2011. What's for breakfast? Nutritional implications of breakfast habits: insights from the NDNS dietary records. *Nutrition Bulletin* : 36, 78—86.
- Guine, R.D.P.F. dan P.M.D.R. Correia (Eds.). 2014. *Engineering Aspects of Cereal and Cereal Based Products*. Boca Raton: CRC Press.
- Gustandy, M. dan Soegiharjo, C.J. 2013. Uji Aktivitas Antioksidan Menggunakan Radikal 1,1-Difenil-2- Pikrilhidrazil Dan Penetapan Kandungan Fenolik Total Fraksi Etil Asetat Ekstrak Etanol Buah Anggur Bali (*Vitis Vinifera L.*). *Jurnal Farmasi Sains dan Komunitas*: 109-120 ISSN : 163-5683.
- Hamid A.A., Aiyelaagbe O.O., Usman L. A., Ameen O. M., Lawal A. 2010. Antioxidants: Its Medicinal and Pharmacological Applications. *Afr. J. Pure and App. Chem.*4(8): 142-151.
- Harborne, J. B. 1996. *Metode Fitokimia*. Terbitan ke-II. a.b. Kosasih Padmawinata. Penerbit ITB. Bandung.

- Hildayanti. 2012. Studi Pembuatan *Flakes* Jewawut. Skripsi. Universitas Hassanudin. Makasar.
- Hootman, R.C (Ed.). 1992. *Manual on Descriptive Analysis Testing for Sensory Evaluation*. Philadelphia: American Society for Testing and Materials.
- Hudson, E.A., Dinh, P.A., Kokubun, T., Simmonds, M., and Gescher, A. 2000. Characterization of Potentially Chemopreventive Phenols in Extracts of Brown Rice that Inhibit the Growth of Human Breast and Colon Cancer Cells. *Cancer Epidemiol Biomarkers Prev.* 9(11): 1163-1170.
- Idolo, I. 2011. Sensory and Nutritional Quality of Madiga Produced from Composite Flour of Wheat and Sweet Potato, *Pak. J. Nutr.* 10(11): 1004-1007.
- Ismadayani, L. 2015. Kandungan Flavonoid, Total Fenol, Dan Antioksidan *Snack Bar* Sorgum Sebagai Alternatif Makanan Selingan Penderita Diabetes Mellitus Tipe 2. Artikel Penelitian. Universitas Diponegoro. Semarang.
- Jati, I.R.A.P, D. Nohr, and H. K. Biesalski. 2013. Micronutrient, Bioactive Compound, and Antioxidant Activity of Indonesian Purple and Orange-Fleshed Sweet Potato, *Nutrition and Food Science*
- Jati, I.R.A.P, D. Nohr, and H. K. Biesalski. 2013. Nutrients and Antioxidant Properties of Indonesian Underutilized Colored Rice, *Nutrition and Food Science*..
- Kayahara, H and ., 2001. Functional components of pre-germinated brown rice, and their health promotion and disease prevention and improvement. *Weekly Agric, Forest* 1791, 4-6.
- Kompasiana. 2001. Mengapa Beras Merah Varietas Toraja Banyak Dicari Orang?. http://www.kompasiana.com/heriyanto_rantelino/mengapa-beras-merah-varietas-toraja-banyak-dicari-orang_54f33f2e745513a12b6c6d43 (18 juni 2016)
- Koswara, S. 2009. *Teknologi Pengolahan Beras*, eBook Pangan. <http://tekpan.unimus.ac.id/wp-content/uploads/2013/07/Teknologi-Pengolahan-Beras-Teori-dan-Praktek.pdf> (18 Juni 2016)

- Kristantini dan H. Purwaningsih. (2009). Potensi Pengembangan Beras Merah Sebagai Plasma Nutfah Yogyakarta. *Jurnal Litbang Pertanian* 28(3).
<http://www.pustaka.litbang.deptan.go.id/publikasi/p3283092.pdf>. 4 Juni 2017
- Kumalaningsih, S., 2006. Antioksidan Alami-Penangkal Radikal Bebas, Sumber, Manfaat, Cara Penyediaan dan Pengolahan. Trubus Agrisarana. Surabaya.
- Langlois, D.P. and Wagoner, J.A. (1967). Production and use of amylose. In: *Starch: Chemistry and Technology*, Vol. II, Ch. XX. Whistler, R.L. & Raschall, E.F. (eds.). Academic Press, New York, USA.
- Lee, C.H., J.K. Cho, S.J. Lee, W.B. Koh, W.J. Park, and C.H. Kim. 2002. Enhancing β -Carotene Content in Asian Noodles by Adding Pumpkin Powder, *Journal of Cereal Chemistry*. 79(4): 593-595.
- Ling, W.H., Cheng, Q.X., Ma, J., and Wang, T. 2001. Red and Black Rice Decrease Atherosclerotic Plaque Formation and Increase Antioxidant Status in Rabbits. *Journal of Nutrition*. 131(5): 1421-1426.
- Lingkar Organik. 2016. Proses Penepungan Beras Merah, komunikasi langsung.
- Luh, B. S., (Ed). 1991. *Rice, Volume 2: Utilization*. New York : AVI Book.
- Marsono, Y. 2002. Indeks Glikemik Umbi-Umbian, *Agritech*. 22(1): 13-16.
- Marsono, Y., dan Topping, D.L. 1993. Complex carbohydrates in Australian rice products-influence of microwave cooking and food processing. *Journal Food Science and Technology, LWT* 26: 364-370.
- Medina, W.T., A.A. de La Llera, J.L. Condori, dan J.M. Aguilera. 2011. Physical Properties and Microstructural Changes during Soaking of Individual Corn and Quinoa Breakfast Flakes, *Journal of Food Science*. 76(3): 254-265.
- Metaliri, M. 2007. Efek Antibakteri Infusum Kulit Anggur (*Vitis vinifera*) Varietas Probolinggo Biru Terhadap *Streptococcus mutans* Asal Saliva, In Vitro. *Skripsi*. Jakarta: Fakultas Kedokteran Gigi Universitas Indonesia

- Mongkolsilp, S., Pongbupakit, I., Sae-Lee, N., Sitthithaworn, W. 2004. Radical Scavenging Activity and Total Phenolic Content of Medicinal Plants Used in Primary Health Care. *SWU J Pharm Sci*:9(1):32-35.
- Murray, Robert K., Daryl K.G., Victor W.R. 2009. *Biokimia Harper Edisi 27*. EGC: McGraw-Hill Companies.
- Ohtsubo, H.,M. Umeda, and E. Ohtsubo. 1991. Organization of DNA sequences highly repeated in rice genomes. *Japan. J. Genet.* 66:241-254.
- Oki, T., Masuda, M., Kobayashi, M., Nishiba, Y., Furuta, S., Suda, I., and Sato, T. 2002. Polymeric Procyanidins as Radical-Scavenging Components in Red-Hulled Rice. *Journal of Agricultural and Food Chemistry.* 50(26): 7524-7529.
- Ozgoz S. Ötles S,. 2014. Health effects of dietary fiber. *Acta Scientiarum Polonorum.* 2(13): 191–202.
- Pengkumsri, N., C. Chaiyasut, C. Saenjum, S. Sirilun, S. Peerajan, P. Suwannalert, S. Sirisattha, and B. S. Sivamaruthi. 2015. Physicochemical and Antioxidative Properties of Black, Brown and Red Rice Varieties of Northern Thailand, *J. Food Sci. Technol.*, 35(2): 331-338.
- Pietta, P.G. 2000. Flavonoids as Antioxidants, *J. Nat. Prod.* 63: 1035-1042.
- Pourmorad, F., Hosseinimehr, S.J., Shahabimajd, N., 2006, Antioxidant Activity, Phenol, and Flavonoid Content of Some Selected Iranian Medicinal Plants, *African Journal of Biotechnology*, 5 (11), 1142-1145.
- Riskesdas. 2013. Riset Kesehatan Dasar. <http://www.depkes.go.id/resources/download/general/Hasil%20Ris kesdas%202013.pdf> (16 Agustus 2016)
- Robinson, T. 1995. *Kandungan Organik Tumbuhan Tinggi Edisi VI*. ITB. Bandung.
- Sacchetti, G., P. Pittia, M. Biserni, G.G. Pinnavaia, dan M.D. Rosa. 2003. Kinetic Modelling of Textural Changes in Ready to Eat Breakfast

- Cereals during Soaking in Semi-Skimmed Milk, *International Journal of Food Science and Technology*. 38: 135-143.
- Santika, A. dan Rozakurniati. 2010. Teknik Evaluasi Mutu Beras dan Beras Merah Pada Beberapa Galur Padi Gogo, *Buletin Fakultas Pertanian*. 15(1): 1-5.
- Soison, B., K. Jangchud, A. Jangchud, T. Harnsilawat, dan K. Piyachomkwan. 2015. Characterization of Starch in Relation to Flesh Colors of Sweet Potato Varieties, *International Food Research Journal*. 22(6): 2302-2308.
- Sompong, R., Siebenhandl-Ehn, S., Linsberger-Martin, G., Berghofer, E. 2011. Physicochemical and antioxidative properties of red and black rice varieties from Thailand, China and Sri Lanka. *J.Food Chem*. 124: 132–140.
- Sukasih, Ermi., Setyadjit. 2012. Formulasi Pembuatan Flake Berbasis Talas Untuk Makanan Sarapan (*Breakfast Meal*) Energi Tinggi Dengan Metode Oven. *J. Pascapanen* 9(2) 2012 : 70 – 76.
- Vichapong J, Sookserm, M, Srijesaruk V, Swatsitang P, Srijaranai S. 2010. High Performance Liquid Chromatographic Analysis of Phenolic Compounds and Their Antioxidant Activities in Rice Varieties. *LWT-Food Science Technology* 43:1325 - 1330.
- Widodo, Y. dan E. Ginting. 2004. Ubi jalar berkadar beta karoten tinggi sebagai sumber vitamin A. Balai Penelitian Tanaman Kacang-kacangan dan Umbi-umbian, Malang.
- Winarsi, H. 2007. *Antioksidan Alami dan Radikal Bebas*. Penerbit Kanisius. Yogyakarta
- Wrigley, C.W., H. Corke, K. Seetharaman, and J. Faubion (Eds.). 2015. *Encyclopedia of Food Grains. Second Edition. Volume 1*. United Kingdom: Academic Press.
- Yodmanee, S., Karrila, T., and Pakdeechanuan, P. 2011. Physical, Chemical, and Antioxidant Properties of Pigmented Rice Grown in Southern Thailand. *International Food Research Journal*. 18(3): 901-906.