

BAB VI KESIMPULAN DAN SARAN

6.1. Kesimpulan

1. Interaksi antara pengurangan telur dan penambahan gum xanthan dalam pembuatan *cake* beras rendah lemak memberikan pengaruh nyata ($\alpha=5\%$) pada terhadap tekstur yang meliputi *hardness*, *springiness*, *gumminess* dan *chewiness*.
2. Pengurangan telur dan penambahan gum xanthan masing-masing memberikan pengaruh nyata ($\alpha=5\%$) terhadap *cohesiveness cake* beras rendah lemak.
3. Pengurangan telur serta penambahan gum xanthan dari 20%:0,2 hingga 40%:0,4 memberikan peningkatan nilai *hardness*, *gumminess*, dan *chewiness* serta menghasilkan penurunan nilai *springiness*.
4. Masing-masing pengurangan telur dari 20% hingga 40% dan penambahan gum xanthan dari 0,2% hingga 0,4% mengakibatkan penurunan nilai terhadap *cohesiveness cake* beras rendah lemak.

6.2. Saran

Pengurangan telur serta penambahan gum xanthan telah memberikan pengaruh nyata terhadap tekstur. Perlu dikaji lebih dalam mengenai pengaruh pengurangan telur serta penambahan gum xanthan dengan konsentrasi yang sama terhadap karakteristik organoleptik *cake* beras rendah lemak agar dapat diketahui batas maksimal pengurangan telur dan penambahan gum xanthan yang tepat sesuai dengan penerimaan konsumen.

DAFTAR PUSTAKA

- Anton, A. and Artfield, S. 2008. Hydrocolloids in Gluten-Free Breads: A Review. *International Journal of Food Sciences and Nutrition*. 59, 11-23.
- AOAC. 1990. *Official Methods of Analysis 14th Edition*. Washington D.C.: Association of Analytical Chemists.
- Ashwini, A., R. Jyotsba and D. Indrani. 2009 Effect of Hydrocolloids and Emulsifier on The Rheological, Microstructural and Quality of Eggless Cake. *Food Hydrocolloids*. 23:700-707.
- Astawan, M. 2009. *Sehat dengan Kacang dan Biji-bijian*. Jakarta: Penebar Swadaya.
- Baker, C. G. J. 1997. *Industrial Drying of Foods*. London: Chapman.
- Barham, P. 2001. *The Science of Cooking*. Jerman: Springer.
- Belitz, H. D., W. Grosch dan P. Schieberle. 2009. *Food Chemistry 4th revised and extended edition*. Germany: Springer-Verlag Berlin Heidelberg.
- Belitz, H. D., W. Grosch, and P. Schieberle. 2009. *Food Chemistry 4th Revised and Extended Edition*. Berlin: Springer.
- Bennion dan Bamford, 1997) Bennion, E. B. and G. S. T. Bamford. 1997. *The Technology of Cake Making, 6th Edition*. India: Chapman and Hall.
- Booth, M.A., G.L Allan and R. Warner-Smith. 1999. Effects of Grinding, Steam Conditioning and Extrusion of a Practical Diet on Digestibility and Weight Gain of Silver Perch. *Bidyanus bidyanus, Aquaculture*. 182 (2000): 287-299.
- Bourne, M. C. 2002. *Food Texture and Viscosity: Concept and Measurement 2nd edition*. New York: Academic Press.

- Brown, A. 2014. *Understanding Food Principles and Preparation Fifth Edition*. Stamford: Cengage Learning.
- Buckle, K.A., R.A. Edwards, G.H. Fleet and M. Wooton. 1987. *Ilmu Pangan* (Poernomo, H. dan Adiono, Penerjemah). Jakarta: Universitas Indonesia.
- Charley, H. 1982. *Food Science*. Second Edition. New York: John Willey and Sons.
- Chevallier, S., Colonna, P., Della Valle, G. and Lourdin, D. 2000. Contribution of Major Ingredients During Baking of Dough Systems. *Jornal of Cereal Science* 31: 241-252.
- Coulate, T. P. 2009. *Food: The Chemistry of It's Components*. Cambridge: Royal Society of Chemistry.
- Crockett, R. 2009. *Food: The Chemistry of It's Components*. Cambridge: Royal Society of Chemistry
- Davis, C. and R. Reeves. 2002. *High Value Opportunities From The Chicken Egg*. Barton: RIRDC Publication.
- Direktorat Gizi Departemen Kesehatan Republik Indonesia. 1996. *Daftar Komposisi Bahan Makanan*. Jakarta: Bhartara.
- Duke, J. A. 1981. *Handbook of Legumes of World Economic Importance*. New York: Plenum Press.
- Edwards, W. P. 2007. *The Science of Bakery Products*. Cambridge: The Royal Society of Chemistry.
- Eisenbrand, G. 2007. *Thermal Processing of Food: Potential Health Benefits and Risks*. Weinheim: WILEY-VCH Verlag GmbH & Co. KgaA.
- Fennema, O.R., 1996. *Food Chemistry Fourth Edition*. New York: CRC Press.
- Figoni, P. 2004. *How Baking Works: Exploring The Fundamentals of Baking Science*. New Jersey: John Wiley & Sons, Inc.

- Gisslen, W. 2005. *Professional Baking 4th edition*. USA: John Wiley and Sons, Inc.
- Gomez, M., F. Ronda, P.A. Caballero, C.A. Blanco and C.M. Rosell. 2007. Functionality of Different Hydrocolloids on the Quality and Shelf-life of Yellow Layer Cakes. *Food Hydrocolloids*. 21, 167-173.
- Gujral, H.S. and Rosell, C.M. 2003. Starch Hydrolyzing enzymes for Retarding The Staling of Rice Bread. *Cereal Chemistry* 80: 750-754.
- Gunawan, N. H. T. 2015. Pengaruh Proporsi Tepung Kacang Merah dan Air terhadap Karakteristik *Cake* Beras Rendah Lemak. *Skripsi S-1*. Surabaya: Universitas Katolik Widya Mandala Surabaya.
- Haque, A. Richardson, R.K., Morris, E.R., Gidley, M.J. and Caswell, D.C. 1993. Thermogelation of Methycellulose. Part II: Effect of Hydroxypropyl Substituents Carbohydrate Polymers 22: 223-232.
- Harjadi. 1990. *Pengemulsi, Pemantap Emulsi dan Pengental dalam Bahan Tambahan Makanan (Food Additives)*. Yogyakarta: Pusat Antar Universitas Pangan dan Gizi, Universitas Gadjah Mada.
- Hui, Y. H. 2006. *Handbook of Food Science, Technology, and Engineering*. Volume 1. USA: CRC Press.
- Hussain, S.S.A and R. A. Al-Qulabi. 2009. Studying the Possibility of Preparing an Egg-Free or Egg-Less Cake. *International Journal of Engineering and Technology*. 1(4):324-329.
- Joyowiguna, P. 2014. Karakteristik *Cake* Beras Rendah Lemak dengan Penggunaan Proporsi Gum Xanthan dan Natrium Karboksimetil Selulosa (Na-CMC). *Skripsi S-1*. Fakultas Teknologi Pertanian UKWMS, Surabaya.
- Kiosseoglou V, Paraskevopoulou A. 2004. Molecular Interaction of Gels Prepared with Egg Yolk and Its Fraction. *Food Hydrocolloids*.

- Kohrs, D., T. J. Herald, F. M. Aramouni and M. Abughoush. 2010. Evaluation of Egg Replacer in A Yellow Cake System. *Emir. J. Food. Agric.* 22(5) : 340-352.
- Kristanti, P. 2009. Pengaruh Penambahan Na-CMC terhadap Sifat Fisik dan Organoleptik Cake Ketan Hitam, *Skripsi S-I*, Fakultas Teknologi Pertanian UKWMS, Surabaya.
- Lawson H. 1995. *Food Oils And Fats : Technology Utilization and Nutrition. an Chapman and Hall*. New York: ITP an International Thomson Publishing Company.
- Lazaridou, A., Duta, D., M. Papageorgiou, N. Belc, and C.G. Biliaderis. 2007. Effect of Hydrocolloids on Dough Rheology and Bread Quality Parameters in Gluten-Free Formulation. *Journal of Food Engineering* 79: 1033-1047.
- Luh, B. S. (Ed). 1991. *Rice Utilization Second Edition Volume II*. New York: Van Nostrand Reinhold.
- Matz, S.A. 1972. *Cookie and Cracker Technology*. Connecticut: The AVI Publishing Co.
- McWilliams, M. 1997. *Foods Experimental Perspectives, 3rd Edition*. New Jersey: Prentice-Hal Inc.
- Meyer, L. H. 1971. *Food Chemistry*. New York: Reinhold Publishing Co.
- Mizukoshi, M. 1985. Model Studies of Cake Baking VI Effects of Cake Ingredients and Cake Formula on Shear Modulus of Cake. *Cereal Chem.* 62 (4): 247-251.
- Moskowitz, H. R. 1987. *Instrumental and Sensory: Measurement Food Texture*. New York: Marcel Dekker, Inc.
- Ognean, C.F., N. Darie dan M. Ognean. 2006. Fat Replacers-Review, *Journal of Agroalimentary Processes and Technologies*, 12 (2), 433-422.
- Onderi, M.O. 2013. *Effects of Xanthan Gum and Added Protein on the Physical Properties of Gluten-Free Pizza Dough–A Texture*

Characterization Study Using Instron Model 3342. University of Wisconsin-Stout, US.

- Petersen, N.B. 1975. *Edible Starches and Starch-Derived Syrups*. New Jersey: Noyes Data Corporation.
- Phillips, G. O. dan P. A. Williams. 2000. *Handbook of Hydrocolloids*. New York: CRC Press.
- Pomeranz, Y. And C. E. Meloan. 1991. *Food Analysis: Theory and Practice*. Connecticut: The AVI Publishing Company, Inc.
- Roshental, A.J. 1999. *Food Texture Measurement and Perception*. Maryland: Aspen Publisher, Inc.
- Saputra, R. 2013. Karakteristik Fisikokimia dan Organoleptik *Cake* Beras dengan Proporsi Margarin dan Kacang Merah Kukus, *Skripsi S-1*, Fakultas Teknologi Pertanian UKWMS, Surabaya.
- Sirait. C. H. 1986. *Telur dan Pengolahannya. Pusat Penelitian dan Pengembangan Peternakan*. Bogor.
- Stadelman, W. J. and O. Cotterill. 1994. *Egg Science and Technology*. Binghampton, New York: Haworth Press, Inc.
- Sukamto. 2010. Perbaikan Tekstur dan Sifat Organoleptik Roti yang Dibuat dari Bahan Baku Tepung Jagung Dimodifikasi oleh Gum Xanthan, *Agrika 4(1)*, 54-59.
- Suprihatno, B., A. A. Darajat., Satoto., Baehaki, S. E., Suprihanto., A. Setyono., S. D. Indrasari., I. P. Wardana., H. Sembiring., 2010. Deskripsi Varietas Padi. Balai Besar Penelitian Tanaman Padi. Kementerian Pertanian.
- Sutedja, A. M. dan Ch. Y. Trisnawati. 2012. Peningkatan Sifat Fungsional Protein Kacang-Kacangan sebagai *Fat Replacer* Berbasis Protein. *Laporan Penelitian*. Pusat Penelitian Pangan dan Gizi. Lembaga Penelitian dan Pengabdian Masyarakat. Surabaya: Universitas Katolik Widya Mandala Surabaya.
- Sutedja, A. M. dan Ch. Y. Trisnawati. 2013. Karakteristik Sensoris dan Mikrostruktur *Cake* Beras Rendah Lemak. *Laporan Penelitian*.

- Pusat Penelitian Pangan dan Gizi. Lembaga Penelitian dan Pengabdian Masyarakat. Surabaya: Universitas Katolik Widya Mandala Surabaya.
- Swanson, B. G. 1996. *Low Calorie Fats and Fat Substitutes*. In "Handbook of Fat Replacers," ed. S. Roller and S. A. Jones, pp. 265-274, CRC Press, Inc., Boca Raton, Fla.
- Trisnawati, C. Y. dan A. M. Sutedja. 2008. Peningkatan Kualitas *Rice Cake* dengan Penambahan Na-CMC dan *Defatted Rice Bran*, Laporan Penelitian Surabaya: PPPG *Research Project 2007*, Lembaga Penelitian dan Pengabdian Masyarakat, Universitas Katolik Widya Mandala Surabaya.
- Trisnawati, Ch. Y. dan A. M. Sutedja. 2014. Pengembangan Penepungan Kacang Merah sebagai *Fat Replacer* pada *Cake* Beras Rendah Lemak melalui Penyangraian dan Pengovenan. *Laporan Penelitian*. Pusat Penelitian Pangan dan Gizi. Lembaga Penelitian dan Pengabdian Masyarakat. Surabaya: Universitas Katolik Widya Mandala Surabaya.
- USDA. 2010. *Nutrient Value and Weight for Edible Portion*. <http://ndb.nal.usda.gov> (8 Agustus 2015).
- Vaclavik, V. A. And E. W. Christian. 2008. *Essentials of Food Science 3rd ed*. New York: Springer.
- Walstra, P. 1983. *Dairy Chemistry and Physics*. New York: John Willey and Sons.
- Wang, R. 2013. Karakteristik Sifat Fungsional Kacang Merah Rebus dengan Variasi Waktu Perebusan, *Skripsi S-1*, Fakultas Teknologi Pertanian UKWMS, Surabaya.
- Whitehurst, Robert J. and M. V. Oort. 2010. *Enzymes in Food Technology Second Edition*. Chichester: Blackwell Publishing Ltd.
- Winarno, F. G. 1993. *Pangan Gizi, Teknologi dan Konsumen*. Jakarta: PT. Gramedia Pustaka Utama.

- Winarno, F.G., 1997. Kimia Pangan dan Gizi. Gramedia Pustaka Utama, Jakarta.
- Xue J, Ngadi MO. 2006. Thermal Properties of Batter Systems Formulated by Combinations of Different Flours. *Lebensmittel Wissenschaft and Technologie*.
- Young, S. L. dan C. F. Shoemaker. 1990. Measurement of Shear Dependent Intrinsic Viscosities of Carboxymethyl Cellulose and Xanthan Gum Suspensions. *Journal of Applied Polymer Science* 42, 2405-2408.
- Zeidanloo, M. H., R. A. Ghavidel and S. E. Afshar. 2014. The Evaluation of Replacement with Soy Flour and Guar Gum in Oil Cake. *Int. J. Biosci.* 4 (10): 222-227