

## **BAB IV**

### **KESIMPULAN**

1. Ada pengaruh penggunaan xylitol dan tagatose terhadap sifat fisikokimia dan organoleptik *cookies* rendah gula.
2. Substitusi sukrosa dengan xylitol menghasilkan *cookies* rendah gula dengan tingkat kekerasan, kerenyahan, warna, dan water activity (Aw) yang berbeda nyata. Konsentrasi xylitol yang semakin tinggi, menghasilkan *cookies* rendah gula dengan tekstur yang semakin lunak, warna yang semakin pucat, kerenyahan yang semakin menurun, dan Aw yang semakin rendah.
3. Substitusi sukrosa dengan 100% tagatose menghasilkan *cookies* rendah gula dengan tingkat kekerasan dan warna yang berbeda nyata dengan *cookies* dengan 100% sukrosa. Konsentrasi tagatose yang semakin tinggi, menghasilkan *cookies* rendah gula dengan tekstur yang semakin keras dan warna yang semakin gelap.
4. Panelis lebih menyukai *cookies* rendah gula dengan konsentrasi sukrosa:xylitol = 50:50 dari segi warna, rasa, tekstur, flavor, *mouthfeel*, dan penrimaan secara keseluruhan pada kisaran nilai 1-9.
5. Cookies rendah gula dengan 100% tagatose paling disukai panelis dari segi warna dan tekstur, dari segi rasa dan penerimaan secara keseluruhan panelis lebih menyukai *cookies* rendah gula dengan 100% sukrosa pada kisaran nilai 1-9.

## DAFTAR PUSTAKA

- Bond, M. and N. Dunning. 2006. Xylitol., (dalam Sweeteners and Sugar Alternatives In Food Technology, Mitchell, H), Blackwell Publishing Ltd.
- Branen, A. Larry, P. Michael Davidson, Seppo Salminen, John H. Thorngate III. 2002. Food Additives. USA: Marcel Dekker, Inc.
- Brown, A., 2008. Understanding Food: Principles and Preparation. USA: Thomson Wadsworth.
- Desrosier, N. W. 1988. *Teknologi Pengawetan Pangan*. UI-Press. Jakarta.
- Duffy, V.B. dan Anderson G.H. 2004. Position Of The American Dietetic Association: Use Of Nutritive and Non Nutritive Sweeteners, Journal Of The American Dietetic Association, 104, 255-275.
- Further Star. 2012. Xylitol Cookies. <http://www.farthest-star.com/sugarfree.aspx> (16 Februari 2012).
- Hussein, E.A., A.E. El-Beltagy and A.M. Gaafar. 2011. Production and Quality Evaluation of Low Calorie Cake, American Journal of Food Technology, 6(9), 827-834
- Kandelman, D. 1997. Sugar, Alternative Sweeteners and Meal Frequency in Relation to Caries Prevention: new perspectives, British Journal of Nutrition, 77, suppl 1, S121-S128.
- Ketaren. 1986. *Minyak dan Lemak Pangan*. Jakarta : Universitas Indonesia-Press.
- Lawson, H. 1995. *Food Oils and Fat Technology: Utilization and Nutrition*. Chapman and Hall ITP and International Thompson Publishing Company. New York.
- Lin, J., C-F. Hwang,, and C-H. Yeh. 2003. Physical and Sensory Characteristics of Chiffon Cake Prepared With Erythritol Replacement For Sucrose, J. Food Sci, vol 68, Nr 6.

- Manley, D. 1998. *Biscuit, Cookie and Cracker Manufacturing Manuals, Manual 1: Ingredients.* England: Woodhead Publishing Limited.
- Musthaq, Zarina., Salim-ur Rehman, Tahir Zahoor and Amir Jamil. 2010. Impact of Xylitol Replacement on Psychochemical Sensory and Microbial Quality of Cookies, *Pakistan Journal of Nutrition*, 9 (6), 605-610.
- Nabors L.O. 1991. Alternative Sweeteners. New York: Blackweell Publishing
- Pasha, I., M.S. Butt, F.M. Anjum, and N.Shehzadi. 2002. Effect of Dietetic Sweeteners On The Quality of Cookies, *International Journal of Agriculture & Biology*, 2, 245-248.
- Saulo, A.A. 2005. Sugar and Sweeteners in Food. *Food Safety and Technology Univeritas of Hawai'i at Manoa*, FST-16
- Smith, J.S. dan Y.H. Hui, 2004. *Food Processing: Principles and Applications.* USA: Blackwell Publishing.
- Sultan, W.J. 1982. *Practical Baking Manual for Instruction and Student.* Connecticut: The AVI Publishing.
- Tange, T., Yuko Sakurai, Mina Hirose, Daisuke Noro, Seiji Iragashi. 2004. The Effect of Xylitol and Flouride on Remineralization of Primary Tooth Enamel Caries *In Vitro*, *Pediatric Dental Journal*, 14 (1), 55-59.
- Thomas, M.S. Wolever MD PhD, Ana Piekarz RD, Marjorie Hollands MSc RD CDE, Katherine Younker MBA RD CDE. 2002. Sugar Alcohols and Diabetes: A Review, *Canadian Journal Of Diabetes*, 26(4), 356-362.
- Taylor,T.P. 2006. Evaluation of The Bulk Sweetener D-Tagatose and The High Intensity Sweetener Splenda as Sugar Replacers in Cookies, *Doctor of Philosophy thesis*, Auburn University-Alabama.

U.P. Skytte. 2006. Tagatose., (dalam Sweeteners and Sugar Alternatives In Food Technology, Mitchell, H), Blackwell Publishing Ltd.

Winkelhausen, E., Ruzica Jovanovic-Malinovska, Elena Velickova and Slobodanka Kuzmanova. 2007. Sensory and Microbiological Quality of a Baked Product Containing Xylitol As An Alternative Sweetener (*Abstract*), International Journal of Food Property, 639-649.

Zumbe, A., Adam Lee., dan David Storey. 2001. Polyols in confectionery: the route to sugar-free, reduced sugar and reduced calorie confectionery, British Journal of Nutrition, 85, Suppl. 1, S31-S45

Zoulias, E.I., Spyros Piknis, Vassiliki Oreopoulou. 2000. Effect of Sugar Replacement by Polyols and Acesulfame-K on Properties of Low-Fat Cookies (*Abstract*), Journal of the Science of Food and Agriculture, 80(14), 2049–2056.