

BAB VI

KESIMPULAN DAN SARAN

6.1. Kesimpulan

1. Konsentrasi susu skim berpengaruh terhadap pH dan total Bakteri Asam Laktat (BAL) *corngurt* sinbiotik, akan tetapi tidak berpengaruh terhadap total asam laktat *corngurt* sinbiotik.
2. Konsentrasi starter berpengaruh terhadap pH, total asam laktat, dan total BAL *corngurt* sinbiotik.
3. Interaksi antara konsentrasi susu skim dan starter berpengaruh terhadap total BAL *corngurt* sinbiotik, akan tetapi tidak berpengaruh terhadap pH dan total asam laktat *corngurt* sinbiotik.
4. Semakin tinggi konsentrasi susu skim dan starter yang ditambahkan, pH *corngurt* sinbiotik semakin tinggi, sedangkan total asam laktat dan total BAL *corngurt* sinbiotik semakin rendah.
5. Perlakuan S₁T₁ (konsentrasi susu skim 5% dan starter 7%) merupakan perlakuan terbaik dengan pH 4,401, total asam laktat 0,88%, dan total BAL 14,2269 log CFU/mL.

6.2. Saran

Corngurt sinbiotik yang dibuat dengan proporsi ekstrak jagung manis dan susu UHT *full cream* yang seimbang disertai penambahan susu skim bubuk sudah memenuhi SNI (Standar Nasional Indonesia) yogurt dari segi pH, total asam laktat, dan total BAL. Oleh karena itu, perlu dilakukan penelitian lebih lanjut mengenai *corngurt* sinbiotik dengan proporsi ekstrak jagung manis yang lebih besar daripada proporsi susu *Ultra High Temperature* (UHT) *full cream* sehingga dapat menurunkan biaya produksi.

DAFTAR PUSTAKA

- Aachary, A.A. 2009. Prebiotics: specific colonic nutrients. In: Bioactive xylooligosaccharides from corncob: enzymatic production and applications. *Thesis*. University of Mysore. 133-141. <http://ir.cftri.com/9409/1/T-2259.pdf> (7 Agustus 2015)
- Adams, M. R. and M.O. Moss. 2008. *Food Microbiology Third Edition*. UK: The Royal Society of Chemistry. 325-348.
- Agustina, W. dan Y. Andriana. 2010. Karakterisasi Yogurt Susu Nabati Kacang Hijau (*Phaseolus radiatus L.*). *Prosiding Seminar Nasional Teknik Kimia “Kejuangan” Pengembangan Teknologi Kimia untuk Pengolahan Sumber Daya Alam Indonesia*. Yogyakarta, 26 Januari 2010. 1-5. <http://repository.upnyk.ac.id/567/1/27.pdf>. (19 Desember 2015).
- Akalin, A.S. and D. Erisir. 2008. Effects of Inulin and Oligofructose on The Rheological Characteristics and Probiotic Culture Survival in Low-Fat Probiotic Ice Cream. *Journal of Food Science*. 73:184-188. http://www.lifesciencesite.com/lsj/life1003/262_20422life1003_174_2_1746.pdf. (19 Desember 2015).
- Akin, M. B., M.S. Akin, and Z. Kirmaci. 2006. Effects of Inulin and Sugar Levels on the Viability of Yogurt and Probiotic Bacteria and the Physical and Sensory Characteristics in Probiotic Ice-cream. *Journal of Food Chemistry*. 104 (2007): 93-99. <http://www.sciencedirect.com/science/article/pii/S0308814606008661>. (19 Desember 2015).
- A.O.A.C. 2006. *Official Methods of Analysis*. USA: AOAC International. Ch. 2 p 10, Ch. 42 p 2-3.
- Apriyantono, A., D. Fardiaz, N. L. Puspitasari, Sedarnawati, dan S. Budiyanto. 1989. *Petunjuk Laboratorium Analisa Pangan*. Bogor: Pusat Antar Universitas Pangan dan Gizi Institut Pertanian Bogor.
- Badan Standarisasi Nasional (BSN). 2009. *SNI 01-2891-1992: Yoghurt*. http://sisni.bsn.go.id/index.php?sni_main/sni/detail_sni/ 3373 (4 Agustus 2015).

- Bari, M. R., R. Ashrafi, M. Alizade, and L. Rofehgarineghad. 2009. Effects of Different Contents of Yogurt Starter/Probiotic Bacteria, Storage Time and Different Concentration of Cysteine on the Microflora Characteristics of Bio-Yogurt. *Research Journal of Biological Sciences*. 4 (2):137-142, 2009. <http://docsdrive.com/pdfs/medwelljournals/rjbsci/2009/137-142.pdf>. (19 Desember 2015).
- Batt, C. A. and M.L. Tortorello. 2014. *Encyclopedia of Food Microbiology Second Edition*. UK: Elsevier. 412-431.
- Bengmark, S. 2010. Pre-, Pro-, Synbiotics and Human Health. *Food Technology and Biotechnology*. 48 (4) 464-475. <http://hrcak.srce.hr/file/92469>. (19 Desember 2015).
- Boeni, S. and R. Pourahmad. 2012. Use of Inulin and Probiotic Lactobacilli in Synbiotic Yogurt Production. *Annals of Biological Research*. 3 (7):3486-3491. <http://scholarsresearchlibrary.com/ABR-vol3-iss7/ABR-2012-3-7-3486-3491.pdf> (25 Februari 2016).
- Bouhnik, Y., K. Vahedi, L. Achour, A. Attar, J. Salfati, P. Pochart, P. Marteau, B. Flourié, F. Bornet, and J.C. Rambaud. 1999. Short-chain Fructo-oligosaccharide Administration Dose-dependently Increases Fecal Bifidobacteria in Healthy Human. *Journal of Nutritional Science and Vitaminology*. 129: 113-116. <http://jn.nutrition.org/content/129/1/113.full> (19 Desember 2015).
- Brown, W. H., C. S. Foote, B. L. Iverson, and E. V. Anslyn. 2012. *Organic Chemistry*. United States: Brooks/Cole, Cengage Learning. 154-155.
- Chandan, R. C., C. H. White, A. Kilara, and Y. H. Hui. 2006. *Manufacturing Yoghurt and Fermented Milks*. Iowa: Blackwell Publishing. 18; 106-110.
- Delzenne, N. M. and P.D. Cani. 2010. Nutritional Modulation of Gut Microbiota in The Context of Obesity and Insulin Resistance: Potential Interest of Prebiotics. *International Dairy Journal*. 20: 277-280.https://www.researchgate.net/profile/Nathalie_Delzenne2/publication/222681309_Nutritional_modulation_of_gut_microbiota_in_the_context_of_obesity_and_insulin_resistance_Potential_interest_of_prebiotics/links/0fcfd508653e27b06f000000.pdf (19 Desember 2015).

- Fardiaz, S. 1993. *Analisis Mikrobiologi Pangan*. Jakarta: PT. Raja Grafindo Persada. 31-37.
- Farnsworth, E. R. 2001. Probiotics and Prebiotics, (dalam *Handbook of Nutraceutical and Functional Foods*, Robert E. C. W.). Florida: CRC Press LLC. 25.
- Fennema, O. R. 1996. *Food Chemistry Third Edition*. New York: Marcel Dekker, Inc.
- Food and Agriculture Organization (FAO). 2013. *Milk and Dairy Products in Human Nutrition*. Rome: Food and Agriculture Organization of The United Nations. 45-70
- Food and Drug Administration (FDA). 2001. *Bacteriological Analytical Manual (BAM): Aerobic Plate Count*. <http://www.fda.gov/Food/FoodScienceResearch/LaboratoryMethods/ucm063346.htm> (4 Agustus 2015)
- Fuller, R. 1989. Probiotics in Man and Animals. *Journal of Applied Bacteriology*. 66: 365–378. <http://www.performance probiotics.com/Downloads/Articles/Fuller%201989%20Probiotics%20in%20man%20and%20animals.pdf> (19 Desember 2015).
- Fuquay, J. W., P. F. Fox, and P. L. H. McSweeney. 2011. *Encyclopedia of Dairy Sciences, Second Edition*. United States: Academic Press. 227.
- Herawati, D. A. dan D. A. A. Wibawa. 2011. Pengaruh Konsentrasi Susu Skim Dan Waktu Fermentasi Terhadap Hasil Pembuatan Soygurt. *Jurnal Ilmiah Teknik Lingkungan*. 1 (2): 48-58. [http://eprints.upnjatim.ac.id/1240/2/dewi\(2\).pdf](http://eprints.upnjatim.ac.id/1240/2/dewi(2).pdf) (19 Desember 2015)
- Hutkins, R. W. and N. L. Nannen. 993. pH Homeostasis in Lactic Acid Bacteria. *Faculty Publications in Food Science and Technology*. Paper 28. 2354-2365. <http://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=1028&context=foodsciefacpub> (19 Desember 2015).
- Kolida, S., K. Tuohy and G.R. Gibson. 2002. Prebiotic Effects of Inulin and Oligofructose. *British Journal of Nutrition*. S:193–197.
- Koswara, S. 2009. *Teknologi Pembuatan Yoghurt*. <http://tekpan.unimus.ac.id/wp-content/uploads/2013/07/Teknologi-Pembuatan-Yoghurt.pdf> (4 Agustus 2015).

- Lund, D. and K. J. Lorenz. 1984. Influence of Time, Temperature, Moisture, Ingredients, and Processing Condition on Starch Gelatinization. *C R C Critical Reviews in Food Science and Nutrition.* 20 (4): 249-273. www.ncbi.nlm.nih.gov/pubmed/6386335 (19 Desember 2015).
- Mani-Lopez, E., E. Palou, and A. Lopez-Malo. 2014. Probiotic Viability and Storage Stability of Yogurts and Fermented Milks Prepared with Several Mixtures of Lactic Acid Bacteria. *Journal of Dairy Science.* 97: 2578-2590. www.ncbi.nlm.nih.gov/pubmed/24745665 (19 Desember 2015).
- Muchtadi, D. 2012. *Pangan Fungsional dan Senyawa Bioaktif.* Bandung: Penerbit Alfabeta. 9-26.
- Mulyani, T. Sudaryati, dan A. Susanto. 2011. Kajian Peran Susu Skim dan Bakteri Asam Laktat pada Minuman Sinbiotik Umbi Bengkuang. Surabaya: UPN Veteran. 46-54. <http://eprints.upnjatim.ac.id/1714/1/file1.pdf> (19 Desember 2015).
- Niness, K.R. 1999. Inulin and Oligofructose: What Are They?. *Journal of Nutrition.* 129:1402-1406. jn.nutrition.org/content/129/7/1402S.full (19 Desember 2015).
- NTU 101. 2013. *Research and Development of NTU 101 Probiotic Strain.* <http://www.ntu101.org/front/bin/home.phtml> (16 November 2015).
- Palungkun, R dan Budiarti. 2001. *Sweet Corn, Baby Corn.* Jakarta: Penebar Swadaya. 4-8.
- Phillips, G. O. and P. A. Williams. 2009. *Book of Hydrocolloid Second Edition.* Cambridge: Woodhead Publishing Limited. 710-722
- Prabandari, W. 2011. Pengaruh Penambahan Berbagai Jenis Bahan Penstabil terhadap Karakteristik Fisikokimia dan Organoleptik Yogurt Jagung. *Skripsi S-1.* Universitas Sebelas Maret Surakarta. core.ac.uk/download/pdf/12351446.pdf (7 Agustus 2015)
- Richana, N dan Suarni. 2007. *Teknologi Pengolahan Jagung.* Bogor: Balai Besar Penelitian dan Pengembangan Pascapanen. 386-409.

- Roberfroid, M.B. 1999. Concept in Functional Foods: The Case of Inulin and Oligofructose. *Journal of Nutrition.* 129:1398-1401. www.ncbi.nlm.nih.gov/pubmed/10395606 (19 Desember 2015).
- Rouzaud, G. C. M. 2007. Functional Food Carbohydrates: Probiotics, Prebiotics, and Synbiotics, Functional Ingredient (dalam *Functional Food Carbohydrates*, Costas G. B. dan Marta S. I.). Boca Raton: CRC Press. 480-493.
- Sarkar, S. 2008. Effect of Probiotics on Biotechnological Characteristic of Yogurt. *British Food Journal.* 10 (7): 717-740. <http://www.emeraldinsight.com/doi/abs/10.1108/00070700810887185> (19 Desember 2015).
- Shihata, A and N. P. Shah. 2000. Proteolitic Profiles of Yogurt and Probiotic Bacteria. *International Dairy Journal.* 10 (2000) 401-408. <http://www.sciencedirect.com/science/article/pii/S0958694600000728> (19 Desember 2015).
- Sunarlim, R dan S. Usmiati. 2007. Kombinasi Beberapa Bakteri Asam Laktat terhadap Karakteristik Yogurt. *Semiloka Nasional Prospek Industri Sapi Perah menuju Perdagangan Bebas 2020.* Puslitbang Peternakan dan Sekolah Tinggi Ilmu Ekonomi Keuangan dan Perbankan Indonesia. Bogor-Indonesia. 326-335. <http://peternakan.litbang.pertanian.go.id/fullteks/lokakarya/loksp08-46.pdf?secure=1> (7 Agustus 2015).
- Surono, I. S. 2004. *Probiotik, Susu Fermentasi dan Kesehatan.* Jakarta: PT Tri Cipta Karya. 31-32.
- Syukur, M. dan A. Rifianto. 2013. Jagung Manis. Jakarta: Penebar Swadaya. 5-12.
- Tamime, A. 2005. *Probiotic Dairy Products.* Oxford: Blackwell Publishing Ltd. 12; 44-47.
- Tamime, A. Y. and R. K. Robinson. 2000. *Yoghurt Science and Technology.* Cambridge: Woodhead Publishing Ltd. 35-37.
- Tamime, A.Y. and R. K. Robinson. 2007. *Tamime and Robinson's Yoghurt.* Boca Raton: CRC Press. 13-123.

- Yasni, S dan A. Maulidya. 2014. Development of Corn Milk Yoghurt Using Mixed Culture of *Lactobacillus delbruekii*, *Streptococcus salivarius*, and *Lactobacillus casei*. *HAYATI Journal of Biosciences*. 21 (1): 1-7. <http://journal.ipb.ac.id/index.php/hayati/article/view/7720/pdf> (19 Desember 2015).
- Yildiz, F. 2010. *Development and Manufacture of Yoghurt and Other Functional Dairy Products*. Boca Raton: Taylor and Francis Group, LLC. 5-6.