

BAB 5

KESIMPULAN DAN SARAN

5.1 Kesimpulan

Berdasarkan hasil penelitian yang dilakukan, didapatkan beberapa kesimpulan sebagai berikut:

1. Berdasarkan hasil pengamatan dan diperkuat dengan analisa ANOVA, dapat disimpulkan bahwa *airflow*, *drumspeed* dan waktu pengambilan sampel (*sampling*) berpengaruh terhadap peningkatan kadar glukosa.
2. Berdasarkan hasil pengamatan dan diperkuat dengan analisa ANOVA, dapat disimpulkan bahwa waktu pengambilan sampel (*sampling*) berpengaruh terhadap penurunan kadar sukrosa.
3. Temperatur saat *roasting* dan pengambilan sampel berdampak pada kadar sukrosa dalam biji kopi.
4. Run 3 dengan variasi *airflow* 50% (6,5 m/s) dan *drumspeed* 80 RPM menghasilkan kadar glukosa tertinggi.
5. Hasil penelitian terbaik dengan kadar glukosa tertinggi pada 1,341% diperoleh pada Run 3 dengan variasi *airflow* 50% (6,5 m/s) dan *drumspeed* 80 rpm. Hal ini didasari pada perbedaan antara kadar glukosa akhir dan awal yang tidak berbeda jauh dan *error bar* yang memiliki garis paling tinggi yang menandakan data glukosa rata-rata pada run 3 sangat bervariasi.

5.2 Saran

Berdasarkan hasil penelitian yang dilakukan, didapatkan beberapa kesimpulan sebagai berikut:

1. Pengaturan temperatur *roasting* dan penyamaan temperatur saat pengambilan sampel sehingga setiap run memiliki temperatur yang sama saat pengambilan sampel.
2. Diperlukan sampel standar gula yang lebih variatif agar parameter kandungan gula lain dalam biji kopi dapat terlihat.
3. Perlu dilakukan kajian lebih lanjut terkait degradasi sukrosa menjadi glukosa dan fruktosa dalam biji kopi.
4. Perlu adanya penelitian terkait citarasa lain yang dianggap penting pada kopi

Daftar Pustaka

- Adna Ridhani, M., & Aini, N. (2021). Potensi Penambahan Berbagai Jenis Gula Terhadap Sifat Sensori Dan Fisikokimia Roti Manis: Review. *Pasundan Food Technology Journal*, 8(3), 61–68. <https://doi.org/10.23969/pftj.v8i3.4106>
- Agustina, R., Nurba, D., Antono, W., & Septiana, R. (2019). Pengaruh suhu dan lama penyangraian terhadap sifat fisika-kimia kopi arabika dan kopi robusta. *Prosiding Seminar Nasional Inovasi Teknologi Untuk Masyarakat*, 285–299.
- Alamsyah, R. (2020). *Analisa Karakteristik Alat Sangrai Biji Kopi 500 gram Dengan Waktu Operasi Tetap Pada 35 Menit*. 0, 226331.
- Ames, J. M. (1998). Applications of the Maillard reaction in the food industry. *Food Chemistry*, 62(4), 431–439. [https://doi.org/10.1016/S0308-8146\(98\)00078-8](https://doi.org/10.1016/S0308-8146(98)00078-8)
- Ariana, R. (2016). 済無 *No Title No Title No Title*. 3(1), 1–23.
- Arsa, M. (2016). Proses Pencoklatan (Browning Process) Pada Bahan Pangan. *Jurusan Kimia Fakultas Matematika Dan Ilmu Pengetahuan Alam Universitas Udayana Denpasar*, 1–12.
- Avallone, S., Guyot, B., Brillouet, J. M., Olguin, E., & Guiraud, J. P. (2001). Microbiological and biochemical study of coffee fermentation. *Current Microbiology*, 42(4), 252–256. <https://doi.org/10.1007/s002840110213>
- Batista, L. R., Chalfoun de Souza, S. M., Silva e Batista, C. F., & Schwan, R. F. (2016). Coffee: Types and Production. *Encyclopedia of Food and Health*, 244–251. <https://doi.org/10.1016/B978-0-12-384947-2.00184-7>
- Budiharto, A., Budiharto, A., & Budiharto, A. (n.d.). *Budidaya dan Pasca Panen KOPI*.
- Buridan, F. (2015). Coffee in Health and Disease Prevention. *Coffee in Health and Disease Prevention*, 201–207. <http://www.sciencedirect.com/science/article/pii/B978012409517500022X>
- Carin, A. A., Sund, R. ., & Lahkar, B. K. (2018). No
主観的健康感を中心とした在宅高齢者における
健康関連指標に関する共分散構造分析Title. *Journal of Controlled Release*, 11(2),

430–439.

Chro, E., De, P. A., & Ac, F. (2006). *AOAC Official Method 995 . 13 Car bo hy drates in Sol u ble (In stant) Coffee (Ap pli ca ble for de ter mi na tion of free and to tal car bo hy drates [ex cept to tal fruc tose , which is degraded] in sol u ble [in stant] coffee .)* *See Ta bles . 11(0)*, 11–15.

De Bruyn, F., Zhang, S. J., Pothakos, V., Torres, J., Lambot, C., Moroni, A. V., Callanan, M., Sybesma, W., Weckx, S., & De Vuyst, L. (2017). Exploring the impacts of postharvest processing on the microbiota and metabolite profiles during green coffee bean production. *Applied and Environmental Microbiology*, 83(1).
<https://doi.org/10.1128/AEM.02398-16>

De Castro, R. D., & Marraccini, P. (2006). Cytology, biochemistry and molecular changes during coffee fruit development. *Brazilian Journal of Plant Physiology*, 18(1), 175–199.
<https://doi.org/10.1590/S1677-04202006000100013>

Dick, R. H. (1990). Coffee and Tea. *Journal of AOAC INTERNATIONAL*, 73(1), 93–93.
<https://doi.org/10.1093/jaoac/73.1.93>

FRANK, H. A., LUM, N. A., & DELACRUZ, A. S. (1965). Bacteria Responsible for Mucilage-Layer Decomposition in Kona Coffee. *Applied Microbiology*, 13(2), 201–207.
<https://doi.org/10.1128/aem.13.2.201-207.1965>

Ghosh, P., & Venkatachalapathy, N. (2014). Processing and Drying of Coffee - A review. *International Journal of Engineering Research & Technology*, 3(12), 784–794.

Haile, M., & Kang, W. H. (2019). The Role of Microbes in Coffee Fermentation and Their Impact on Coffee Quality. *Journal of Food Quality*, 2019(March).
<https://doi.org/10.1155/2019/4836709>

Hicks, A. (2002). Post-harvest Processing and Quality Assurance for Speciality/Organic Coffee Products. *FAO Regional Office for Asia and the Pacific*, 6.
http://www.journal.au.edu/au_techno/2002/jan2002/article2.pdf

Hustiany, R. (2016). *Reaksi Maillard*.

Illy, A., & Viani, R. (1995). *Espresso Coffee*.

Indah, N. (2015). Kemanisan Pencoklatan, Reaksi Maillard Dan Karamelisasi. *Makalah*

Teknologi Pangan Kemanisan.

- International Coffee Organization. (2023). *Coffee Report and Outlook (CRO)*. 39.
- Isnanda, W. (2018). Analisis Nilai Tambah Kopi Arabika Specialty Wed Hulled, Honey Proses, Natural Proses dan Premium di Kabupaten Aceh Tengah (Kasus Unit Usaha Indi Gayo Coffee). *Universitas Sumatera Utara*.
- Ivanova, N., Gugleva, V., Dobрева, M., Pehlivanov, I., Stefanov, S., & Andonova, V. (2016). We are IntechOpen , the world ' s leading publisher of Open Access books Built by scientists , for scientists TOP 1 % . *Intech, i(tourism)*, 13.
- Kenali 4 Tingkatan Roasting Kopi dan Pengaruhnya pada Rasa Kopi*. (n.d.). Retrieved March 6, 2023, from <https://food.detik.com/info-kuliner/d-6452911/kenali-4-tingkatan-roasting-kopi-dan-pengaruhnya-pada-rasa-kopi>
- Khetarpaul, N., & Chauhan, B. M. (1990). Improvement in HCl-extractability of minerals from pearl millet by natural fermentation. *Food Chemistry*, 37(1), 69–75. [https://doi.org/10.1016/0308-8146\(90\)90046-7](https://doi.org/10.1016/0308-8146(90)90046-7)
- Kopi, L. B., Pertanian, K., Jenderal, D., & Indonesia, P. (2022). *I. pendahuluan 1.1*. 1–4.
- Mardiana, R., Shidiq, S. S., Widiastuti, E., & Hariyadi, T. (2021). Pengaruh suhu roasting terhadap perubahan kadar lemak, kadar asam total, dan morfologi mikrostruktural kopi robusta. *Jurnal Irwns*, 4(5), 151–156.
- Masoud, W., & Jespersen, L. (2006). Pectin degrading enzymes in yeasts involved in fermentation of *Coffea arabica* in East Africa. *International Journal of Food Microbiology*, 110(3), 291–296. <https://doi.org/10.1016/j.ijfoodmicro.2006.04.030>
- Moshinsky, M. (1959). No Title يليب. In *Nucl. Phys.* (Vol. 13, Issue 1).
- Mottram, D. S. (1998). Flavour formation in meat and meat products: A review. *Food Chemistry*, 62(4), 415–424. [https://doi.org/10.1016/S0308-8146\(98\)00076-4](https://doi.org/10.1016/S0308-8146(98)00076-4)
- Nadhiroh, H. (2018). Studi Pengaruh Metode Pengolahan Pasca Panen Terhadap Karakteristik Fisik, Kimiawi, dan Sensoris Kopi Arabika Malang. *Skripsi*, Universitas Brawijaya. Malang.
- Nasanit, R., & Satyawut, K. (2015). Microbiological study during coffee fermentation of *Coffea arabica* var. *chiangmai 80* in Thailand. *Kasetsart Journal - Natural Science*,

49(1), 32–41.

- Netramai, S., Kijchavengkul, T., Sompoo, P., & Kungnimit, W. (2018). The effect of intrinsic and extrinsic factors on moisture sorption characteristics of hard candy. *Journal of Food Processing and Preservation*, 42(5), e13599. <https://doi.org/10.1111/JFPP.13599>
- NOR Coffee Indonesia. (2019). Apa Itu Roasting Kopi. *Rahasia Candu - Roasting Kopi*, 1–105. <https://norcofeeroaster.com/wp-content/uploads/2019/07/Apa-itu-Roasting-Kopi.pdf>
- Oosterveld, A., Voragen, A. G. J., & Schols, H. A. (2003). Effect of roasting on the carbohydrate composition of *Coffea arabica* beans. *Carbohydrate Polymers*, 54(2), 183–192. [https://doi.org/10.1016/S0144-8617\(03\)00164-4](https://doi.org/10.1016/S0144-8617(03)00164-4)
- Perkebunan, D. J. (2020). Statistik Perkebunan Non Unggulan Nasional 2020-2022. *Sekretariat Direktorat Jendral Perkebunan*, 1–572.
- Phitakwinai, S., Thepa, S., & Nilnont, W. (2019). Thin-layer drying of parchment Arabica coffee by controlling temperature and relative humidity. *Food Science and Nutrition*, 7(9), 2921–2931. <https://doi.org/10.1002/fsn3.1144>
- Poerwanty, H. A., Waris, A., Teknologi Pertanian, B., Pertanian, F., & Poerwanty Fakultas Pertanian, H. A. (n.d.). *FERMENTASI TEKNOLOGI OHMIC PARCHMENT COFFEE BEANS (KOPI HS BASAH) TERHADAP AROMA THE FERMENTATION OF PARCHMENT OHMIC TECHNOLOGY USED TO PROCESS COFFEE BEANS (A WET BLACK COFFEE) AROMA*.
- Sampo, L. (2017). *Coffee Roasting Basics: Developing Flavour by Roasting*. Baristainstitute.Com. <https://www.baristainstitute.com/blog/sampo-latvakangas/april-2022/coffee-roasting-basics-developing-flavour-roasting>
- Sasongko, I. J., & Rivai, M. (2018). Mesin Pemanggang Biji Kopi dengan Suhu Terkendali Menggunakan Arduino Due. *Jurnal Teknik ITS*, 7(2). <https://doi.org/10.12962/j23373539.v7i2.31205>
- Sholehah, C. W. M. (2019). Analisa Kadar Kafein pada Kopi Jenis Robusta dengan Menggunakan Spektrofotometri Ultraviolet. *Institut Kesehatan Helvetia*, 1–100.
- Sinaga, S. H., & Julianti, E. (2021). Physical characteristics of Gayo arabica coffee with semi-washed processing. *IOP Conference Series: Earth and Environmental Science*,

782(3). <https://doi.org/10.1088/1755-1315/782/3/032093>

- Tamanna, N., & Mahmood, N. (2015). Food processing and maillard reaction products: Effect on human health and nutrition. *International Journal of Food Science*, 2015. <https://doi.org/10.1155/2015/526762>
- Taylor, P., Whitfield, F. B., Mottram, D. S., & Whitfield, F. B. (2009). Volatiles from interactions of Maillard reactions and lipids Volatiles from Interactions of Maillard Reactions and Lipids. *Food Science and Nutrition*, 31(July 2012), 1–58.
- Wilson, P. S. (2014). Coffee roasting acoustics. *The Journal of the Acoustical Society of America*, 135(6), EL265–EL269. <https://doi.org/10.1121/1.4874355>
- Wintgens, J. N. (2008). Coffee: Growing, Processing, Sustainable Production: A Guidebook for Growers, Processors, Traders, and Researchers. *Coffee: Growing, Processing, Sustainable Production: A Guidebook for Growers, Processors, Traders, and Researchers*, 1–976. <https://doi.org/10.1002/9783527619627>
- Yulin Masdakaty. (2015). *TENTANG PROSES PENYANGRAIAN KOPI | Otten Coffee*. Ottencoffee.Co.Id. <https://ottencoffee.co.id/majalah/tentang-coffee-roasting>