DAFTAR PUSTAKA

Afriza, R., & Ismanilda. 2019. Analisis Perbedaan Kadar Gula Pereduksi dengan Metode *Lane Eynon* dan *Luff Schoorl* pada Buah Naga Merah (*Hylocereus polyrhizus*). *Jurnal Teknologi dan Manajemen Pengelolaan Laboratorium (Temapela)*, 2(2): 90-96.

Afrizon, A. Andi, I., & Darkam, M. 2020. Upaya Peningkatan Produksi Kopi dengan Panen Petik Merah di Kabupaten Rejang Lebong. *AGRITEPA*, 7(1): 31-40.

Alam, I., Warkoyo, W., & Siskawardani, D. D. 2023. Karakteristik Tingkat Kematangan Buah Kopi Robusta (*Coffea canephora* A. Froehner) dan Buah Kopi Arabika (Coffea arabica Linnaelus) Terhadap Mutu dan Cita Rasa Seduhan Kopi. *Food Technology and Halal Science Journal*, *5*(2), 169–185. https://doi.org/10.22219/fths.v5i2.21925

Allen, M. J., Sabir, S. & Sharma, S. 2021. *Gaba Receptor*. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing.

Asy'ari Hasbullah, U. H., & Rini Umiyati, dan. (2021). Antioxidant Activity and Total Phenolic Compounds of Arabica and Robusta Coffee at Different Roasting Levels. *Journal of Physics: Conference Series*, *1764*(1), 012033. https://doi.org/10.1088/1742-6596/1764/1/012033

Badan Pusat Statistik. 2020. *Statistik Kopi Indonesia*. Badan Pusat Statistik.

Badan Standarisasi Nasional (BSN). SNI 01-2907-2008. Biji Kopi. Standarisasi Nasional. Jakarta.

Baggenstoss, J., Poisson, L., Kaegi, R., Perren, R., & Escher, F. (2008). Coffee roasting and aroma formation: Application of different time−temperature conditions. Journal of Agricultural and Food Chemistry, 56(14), 5836–5846. https://doi.org/10.1021/jf800 327j

Banti, M., & Abraham, E. (2021). Coffee Processing Methods, Coffee Quality and Related Environmental Issues. *Journal of Food and Nutrition Sciences*, *9*(6), 144. https://doi.org/10.11648/j.jfns.20210906.12

Budi, D., Wahyu, M., Yusianto, & Atina, R. 2020. Karakterisasi Kopi Bubuk Robusta (*Coffea canephora*) Tulungrejo Terfermentasi dengan Ragi *Saccharomyces cerevisiae*. *Jurnal Agroindustri*, *10*(2): 129-138.

Buffo, R.A. dan Cardelli-Freire, C. 2004. Coffee flavour: An overview. *Flavour Fragr. J.*, *19*: 99–104.

Bourneow, C. & Toontam, N. (2019). Microbiological Quality and Some Bioactive Compounds in Relation to Sensory Profiles During Germination of Brown-Purple-Pigmented Rice. *International Food Research Journal*, *26*(3), 1011–1021.

Bown, A. W., MacGregor, K. B., & Shelp, B. J. (2006). Gamma-aminobutyrate: Defense Against Invertebrate Pests?. *Trends in Plant Science, 11*(9), 424–427. https://doi.org/10.1016/j.tplants.2006.07.002

Calín-Sánchez, Á., & Carbonell-Barrachina, Á. A. (2021). Flavor and Aroma Analysis as a Tool for Quality Control of Foods. *Foods, 10*(2), 224. https://doi.org/10.3390/foods10020224

Caporaso, N., Whitworth, M. B., Cui, C., & Fisk, I. D. (2018). Variability of single bean

coffee volatile compounds of Arabica and robusta roasted coffees analysed by SPME-GC-MS. Food Research International, 108, 628–640. https://doi.org/10.1016/j.foodr es.2018.03.077

Carillo, P. (2018). GABA Shunt in Durum Wheat. *Frontiers in Plant Science*, 9. https://doi.org/10.3389/fpls.2018.00100

Cevallos-Casals, B. A., & Cisneros-Zevallos, L. (2010). Impact of Germination on Phenolic Content and Antioxidant Activity of 13 Edible Seed Species. *Food Chemistry*, *119*(4), 1485–1490. https://doi.org/10.1016/j.foodchem.2009.09.030

Chahtane, H., Kim, W., & Lopez-Molina, L. (2016). Primary seed dormancy: a temporally multilayered riddle waiting to be unlocked. Journal of Experimental Botany, erw377. https://doi.org/10.1093/jxb/erw377

Chauhan, A. (2014). GC-MS Technique and its Analytical Applications in Science and Technology. *Journal of Analytical & Bioanalytical Techniques*, *5*(6). https://doi.org/10.4172/2155-9872.1000222

Cheng, B., Smyth, H. E., Furtado, A., & Henry, R. J. 2020. Slower Development of Lower Canopy Beans Produces Better Coffee. *Journal of Experimental Botany*, *71*(14), 4201–4214. https://doi.org/10.1093/jxb/eraa151

Costa, R., Dugo, P., Dugo, G., & Mondello, L. (2010). *Poster*. 34th International Symposium on Capillary Chromatography.

Dewi, N.V., Fajaryanti, N & Masruriati, E. 2017. Perbedaan Kadar Kafein pada Ekstrak Biji, Kulit Buah dan Daun Kopi (*Coffea Arabica* L) dengan Metode Spektrofotometeri UV-VIS. *Jurnal Farmasetis*, *6*(2): 29-38.

[Ditjenbun] Direktorat Jendera Perkebunan 2016. Statistik Perkebunan Indonesia 2015-2017 Kopi.

Dippong, T., Dan, M., Kovacs, M. H., Kovacs, E. D., Levei, E. A., & Cadar, O. (2022). Analysis of Volatile Compounds, Composition, and Thermal Behavior of Coffee Beans According to Variety and Roasting Intensity. *Foods*, *11*(19), 3146. https://doi.org/10.3390/foods11193146

Dong, W., Tan, L., Zhao, J., Hu, R., & Lu, M. (2015). Characterization of Fatty Acid, Amino Acid and Volatile Compound Compositions and Bioactive Components of Seven Coffee (*Coffea robusta*) Cultivars Grown in Hainan Province, China. *Molecules*, *20*(9), 16687–16708. https://doi.org/10.3390/molecules200916687

Farah, A., & Donangelo, C. M. (2006). Phenolic Compounds in Coffee. *Brazilian Journal of Plant Physiology*, *18*(1), 23–36. https://doi.org/10.1590/S1677-04202006000100003

Farhaty, N., & Muchtaridi. 2016. Tinjauan Kimia dan Aspek Farmakologi Senyawa Asam Klorogenat Pada Biji Kopi: Review. *Farmaka*, *14*(1).

Farinon, B., Costantini, L., Molinari, R., Di Matteo, G., Garzoli, S., Ferri, S., Ceccantoni, B., Mannina, L., & Merendino, N. (2022). Effect of Malting on Nutritional and Antioxidant Properties of The Seeds of Two Industrial Hemp (*Cannabis sativa* L.) Cultivars. *Food Chemistry*, *370*, 131348. https://doi.org/10.1016/j.foodchem.2021.131348

Giraudo, A., Grassi, S., Savorani, F., Gavoci, G., Casiraghi, E., & Geobaldo, F. (2019). Determination of The Geographical Origin of *Green coffee bean*s Using

NIR Spectroscopy and Multivariate Data Analysis. *Food Control*, *99*: 137–145. https://doi.org/10.1016/j.foodcont.2018.12.033

Gonzalez-Rios, O., Suarez-Quiroz, M. L., Boulanger, R., Barel, M., Guyot, B., Guiraud, J. P. dan Schorr-Galindo, S. (2007). Impact of "Ecological" Post-Harvest Processing on Coffee Aroma: II. Roasted coffee. *Journal of Food Composition and Analysis*, *20*(3-4): 297-307.

Gorji, Z., H. Kord-Varkaneh, S. Talaei, A. Nazary-Vannani, C. C. T. Clark, S. Fatahi, J. Rahmani, S. Salamat, & Y. Zhang. (2019). The Effect of Green-Coffee Extract Supplementation on Obesity: A Systematic Review and Dose-response Meta-analysis of Randomized Controlled Trials. *Phytomedicine*, *63*: 153018.

Haile, M., & Kang, W. H. (2019). The Role of Microbes in Coffee Fermentation and Their Impact on Coffee Quality. Journal of Food Quality, 2019, 1–6. https://doi.org/10.1155/2019/4836709

Han, B., A. Nazary-Vannani, S. Talaei, C. C. T. Clark, J. Rahmani, R. Rasekhmagham, & H. Kord-Varkaneh. (2019). The Effect of Green Coffee Extract Supplementation on Blood Pressure: A Systematic Review and Meta-analysis of Randomized Controlled Trials. *Phytother Res*, *33*(11): 2918–2926.

Hasanuzzaman, M., Nahar, K., Alam, Md., Roychowdhury, R., & Fujita, M. (2013). Physiological, Biochemical, and Molecular Mechanisms of Heat Stress Tolerance in Plants. International Journal of Molecular Sciences, 14(5), 9643–9684. https://doi.org/10.3390/ijms14059643

Hepsomali, P., Groeger, J. A., Nishihira, J., & Scholey, A. (2020). Effects of Oral Gamma-Aminobutyric Acid (GABA) Administration on Stress and Sleep in Humans: A Systematic Review. *Frontiers in Neuroscience*, *14*: 923. https://doi.org/10.3389/fnins.2020.00923

Hidayat, T., Prasetyo, P., & Fahrurrozi, F. (2021). Pengaruh Tingkat Kematangan Buah terhadap Kehilangan Hasil dan Mutu Green Bean Kopi Robusta. *Jurnal Tanaman Industri Dan Penyegar*, *8*(2), 67. https://doi.org/10.21082/jtidp.v8n2.2021.p67-78

Hotmian, E., Suoth, E., & Tallei, T. (2021). GC-MS (Gas Chromatography-Mass Spectography) Analysis of Nut Grass Tuber (*Cyperus rotundus* L.) Methanolic Extract. *Pharmacon*, *10*(2): 849-856.

Ichsan, C. N. I. N., Hereri, A. I., & Budiarti, L. (2013). Kajian Warna Buah Dan Ukuran Benih Terhadap Viabilitas Benih Kopi Arabika (Coffea arabica L.) varietas Gayo 1. *Jurnal Floratek, 8*(2), 110-117.

International Coffee Organization (ICO). 2017. *ICO Annual Review 2017-2018*. International Coffee Organization. London.

Jalil, S. U., Ahmad, I., & Ansari, M. I. (2017). Functional Loss of GABA Transaminase (GABA-T) Expressed Early Leaf Senescence Under Various Stress Conditions in *Arabidopsis thaliana*. *Current Plant Biology*, 9–10, 11–22. https://doi.org/10.1016/j.cpb.2017.02.001

Jang, H. J., Son, H. H., & Lee, D. S. (2011). Optimization of Disk Sorptive Extraction Based on Monolithic Material for The Determination of Aroma Compounds from *Lantana camara* L. by Gas Chromatography-Mass Spectrometry. *Bulletin of the*

Korean Chemical Society, *32*(12), 4275–4280. https://doi.org/10.5012/bkcs.2011.32.12.4275

Jeszka-Skowron, M., Sentkowska, A., Pyrzyńska, K., & De Peña, M. P. (2016). Chlorogenic 30 Acids, Caffeine Content and Antioxidant Properties of Green Coffee Extracts: Influence of *Green coffee bean* Preparation. *European Food Research and Technology*, *242*(8).

Korkmaz, A., Atasoy, A. F., & Hayaloglu, A. A. (2020). Changes in Volatile Compounds, Sugars and Organic Acids of Different Spices of Peppers (*Capsicum annuum* L.) During Storage. *Food Chemistry*, 311, 125910. https://doi.org/10.1016/j.foodchem.2019.125910

Kementerian Pertanian. (2020). Outlook Kopi 2020. Pusat Data dan Sistem Informasi Pertanian Sekretariat Jenderal – Kementerian Pertanian.

Kim, Y., Kim, Y., & Jhon, D. Y. (2018). Changes of the Chlorogenic Acid, Caffeine, γ-aminobutyric Acid (gaba) and Antioxdant Activities During Germination of Coffee Bean (*Coffea arabica*). *Emirates Journal of Food and Agriculture*, *30*(8), 675–680. https://doi.org/10.9755/ejfa.2018.v30.i8.1763

Kitzberger, C. S. G., Pot, D., Marraccini, P., Pereira, L. F. P., & Scholz, M. B. D. S. (2020). Flavor Precursors and Sensory Attributes of Coffee Submitted to Different Post-Harvest Processing. *AIMS Agriculture and Food*, *5*(4), 700–714. https://doi.org/10.3934/agrfood.2020.4.700

Latunra, A. I., Eva, J., Besse, M., & Ophirtus, S. (2021). Analisis Kandungan Kafein Kopi (*Coffea arabica*) pada Tingkat Kematangan Berbeda Menggunakan Spektrofotometer UV-VIS. *Jurnal Ilmu Alam dan Lingkungan*, *12*(1): 45-50.

Lestari, D., & Linda, R. (2016). Pematahan Dormansi dan Perkecambahan Biji Kopi Arabika (*Coffea arabika* L.) dengan Asam Sulfat (H2SO4) dan Giberelin (GA3). *Protobiont*, *5*(1): 8-1.

Li, Z., Zhou, B., Zheng, T., Zhao, C., Shen, X., Wang, X., Qiu, M., & Fan, J. (2023). Integrating Metabolomics and Proteomics Technologies Provides Insights into the Flavor Precursor Changes at Different Maturity Stages of Arabica Coffee Cherries. *Foods*, *12*(7), 1432. https://doi.org/10.3390/foods12071432

Liu, C., Yang, Q., Linforth, R., Fisk, I. D., & Yang, N. (2019). Modifying Robusta Coffee Aroma by Green Bean Chemical Pre-treatment. *Food Chemistry*, *272*, 251–257. https://doi.org/10.1016/j.foodchem.2018.07.226

Liu, C., Liu, X., Tian, X., Zhang, J., Zhang, Z., Shi, J., Xu, J., & Ren, X. (2021). Determination of volatile profiles inside apple fruit storage facilities using MonotrapTM monolithic silica adsorbent and GC–MS. *Horticultural Plant Journal*, *7*(4), 267–274. https://doi.org/10.1016/j.hpj.2020.12.003

Liu, Xia, Wang, & Chen. (2019). Identification of the Non-Volatile Taste-Active Components in Crab Sauce. *Foods,* *8*(8), 324. https://doi.org/10.3390/foods8080324

Megat Rusydi, M. R., & Azrina, a. (2012). Effect of Germination on Total Phenolic, Tannin and Phytic Acid Contents in Soy Bean and Peanut. *International Food Research Journal*, *19*(2), 673–677.

Monakhova, Y. B., Ruge, W., Kuballa, T., Ilse, M., Winkelmann, O., Diehl, B.,

Thomas, F., & Lachenmeier, D. W. (2015). Rapid Approach to Identify The Presence of Arabica and Robusta Species in Coffee Using 1H NMR Spectroscopy. *Food Chemistry*, *182*, 178–184. https://doi.org/10.1016/j.foodchem.2015.02.132

Montavon, P., Mauron, A.-F., & Duruz, E. (2003). Changes in Green Coffee Protein Profiles during Roasting. Journal of Agricultural and Food Chemistry, 51(8), 2335–2343. https://doi.org/10.1021/jf020832b

Mortzfeld, F. B., Hashem, C., Vranková, K., Winkler, M., & Rudroff, F. (2020). Pyrazines: Synthesis and Industrial Application of these Valuable Flavor and Fragrance Compounds. Biotechnology Journal, 15(11). https://doi.org/10.1002/biot.202000064

Nadhifa, D. G. (2022). Peningkatan Mutu dan Karakteristik Kimia Kopi Robusta (*Coffea canephora*) yang Mengalami Flavor Defect dengan Proses Perkecambahan. *Skripsi* Universitas Hasanuddin: Makassar.

Navarra, G., Moschetti, M., Guarrasi, V., Mangione, M. R., Militello, V., & Leone, M. (2017). Simultaneous Determination of Caffeine and Chlorogenic Acids in Green Coffee by UV/Vis Spectroscopy. *Journal of Chemistry*, (6435086): 1-8

Nurhaliza, A., Priyadi, R., & Sunarya, Y. (2023). Pengaruh Berbagai Cara Pemecahan Dormansi Benih Kopi Arabika (*Coffea arabica* L.) terhadap Perkecambahan.. *JA-CROPS Journal of Agrotechnology and Crop Science*, *1*(1): 35-43.

Ohanenye, I. C., Tsopmo, A., Ejike, C. E. C. C., & Udenigwe, C. C. (2020). Germination as A Bioprocess for Enhancing The Quality and Nutritional Prospects of Legume Proteins. *Trends in Food Science & Technology*, *101*: 213–222. https://doi.org/10.1016/j.tifs.2020.05.003

Ongo, E. A., Montevecchi, G., Antonelli, A., Sberveglieri, V., & Sevilla, F. (2020). Metabolomics Fingerprint of Philippine Coffee by SPME-GC-MS for Geographical and Varietal Classification. *Food Research International*, *134*. https://doi.org/10.1016/j.foodres.2020.109227

Pamungkas, M. T., Masrukan, M., & SAR, K. (2021). Pengaruh Suhu dan Lama Penyangraian (*Roasting*) terhadap Sifat Fisik dan Kimia pada Seduhan Kopi Arabika (*Coffea Arabica* L.) dari Keluarga Kabupaten Gayo, Provinsi Aceh. *AGROTECH: Jurnal Ilmiah Teknologi Pertanian*, *3*(2), 1–10. https://doi.org/10.37631/agrotech.v3i2.278

Panggabean, E. 2011. Buku Pintar Kopi. Agromedia Pustaka, Jakarta.

Park, K. B. & S. H. Oh. (2007). Production of Yogurt with Enhanced Level of *Gamma aminobutyric acid* and Valuable Nutrients Using Lactic Bacteria and Germinated Soybean Extract. *Bioresour. Technol*, *98*(8): 1675-1679.

Pires, M. A., Pastrana, L. M., Fuciños, P., Abreu, C. S., & Oliveira, S. M. (2020). Sensorial Perception of Astringency: Oral Mechanisms and Current Analysis Methods. *Foods*, *9*(8), 1124. https://doi.org/10.3390/foods9081124

Praphutphitthaya, P., Tiyayon, C., Chetiyanukornkul, T., & Pankasemsuk, T. (2016). Effect of Brassin-Like Substance on The Quality of Early Germinated Arabica

Coffee Bean (*Coffea arabica* L.). *Pakistan Journal of Biotechnology*, *13*(3): 165-172.

Pua, A., Goh, R. M. V., Huang, Y., Tang, V. C. Y., Ee, K.-H., Cornuz, M., Liu, S. Q., Lassabliere, B., & Yu, B. (2022). Recent Advances in Analytical Strategies for Coffee Volatile Studies: Opportunities and Challenges. *Food Chemistry*, 388, 132971. https://doi.org/10.1016/j.foodchem.2022.132971

Rahardjo, P. (2012). Kopi: Panduan Budi Daya dan Pengolahan Kopi Arabika dan Robusta. Penebar Swadaya, Jakarta.

Ramos-Ruiz, R., Martinez, F., & Knauf-Beiter, G. (2019). The effects of GABA in plants. *Cogent Food & Agriculture*, *5*(1), 1670553. https://doi.org/10.1080/23311932.2019.1670553

Riastuti, A. D. (2021). Karakteristik Morfologi Biji Kopi Robusta (*Coffea canephora*) Pascapanen di Kawasan Lereng Meru Betiri sebagai Sumber Belajar SMK dalam Bentuk E-Modul. Universitas Muhamadiyah Jember.

Riyadi, E., Andarwulan, N., Didah, D., & Faridah, N. (2014). Profil Senyawa Volatil Identitas Nutmeg Oil, Patchouli Oil dan Fresh Ginger Oil Asal Indonesia. *Jurnal Mutu Pangan*, *1*(1), 19–25.

Rizki, D., Wijonarko, B. R., & Purwanto, P. (2020). Karakter Agronomis dan Fisiologis Tanaman Kopi Robusta (*Coffea canephora*) pada Dataran Tinggi di Kecamatan Pejawaran Kab. Banjarnegara. *Composite: Jurnal Ilmu Pertanian*, *2*(1): 11–16.

Rohaeni, N., & Farida, F. (2019). Pengaruh Tingkat Kematangan Buah Terhadap Viabilitas Benih Kopi (*Coffea robusta* L.). *Jurnal Pertanian Terpadu*, *7*(2), 228–235. https://doi.org/10.36084/jpt..v7i2.202

Rohman, A. dan Gandjar, I. G. (2007). *Metode Kromatografi untuk Analisis Makanan BAB III hal. 43-75*. Yogyakarta: Pustaka Belajar.

Rosaini, H., Roslinda, R., & Vinda, H. (2015). Penetapan Kadar Protein secara Kjeldahl beberapa Makanan Olahan Kering Remis (*Corbiculla moltikiana* Prime.) dari Daun Singkarak. *Jurnal Farmasi Higea*, *7*(2): 120-127.

Rosental, L., Nonogaki, H., & Fait, A. (2014). Activation and regulation of primary metabolism during seed germination. *Seed Science Research, 24*(1), 1–15. https://doi.org/10.1017/S0960258513000391

Sahil K, Prashant B, Akanksha M, Premjeet S, Devashish R (2011) GC-MS: Applications. *International Journal Pharma & Biological Archives, 2*: 1544-1560.

Santosa, K. M., Supriyadi, S., Anggrahini, S., & Rahmadian, Y. (2021). Sensory Analysis, Caffeine, Chlorogenic Acid and Non-Volatile Taste Compounds of Arabica Coffee (Coffea arabica) Fermented with Sugar Addition for Brew Taste. *Indonesian Food and Nutrition Progress, 17*(2), 37. https://doi.org/10.22146/ifnp.52241

Saputri, M., H. N. Lioe, & C. H. Wijaya. (2020). Pemetaan Karakteristik Kimia Biji Kopi Arabika Gayo dan Robusta Gayo. *Jurnal Teknologi dan Industi Pangan*, *31*(7): 76-85.

Sato, A., Sotomaru, K., & Takeda, M. (2009). *Poster*. 40th International Symposium on Essential Oils.

SCCA. 2015. Cupping Specialty Coffee. America.

Seifi, M., Brown, J. F., Mills, J., Bhandari, P., Belelli, D., Lambert, J. J., Rudolph, U., & Swinny, J. D. (2014). Molecular and Functional Diversity of GABA-A Receptors in the Enteric Nervous System of the Mouse Colon. *Journal of Neuroscience, 34*(31): 10361–10378. https://doi.org/10.1523/JNEUROSCI.0441-14.2014

Selmar, D., Bytof, G., Knopp, S.-E. & Breitenstein, B. (2006). Germination of Coffee Seeds and Its Significance for Coffee Quality. *Plant Biology*, *8*: 260-264.

Selmar, D., Kleinwächter, M., Bytof, G. (2014). Metabolic Responses of Coffee Beans during Processing and Their Impact on Coffee Flavor. *Cocoa and Coffee Fermentation 1 Edition*. CRC Press.

Shimizu, M.M., & Mazzafera, P. (2000). Compositional Changes of Proteins and Amino Acids in Germinating Coffee Seeds. *Brazilian Archives of Biology and Technology, 43*, 259-265.

Spinnler, H.-E. (2011). Smell, Taste, and Flavor. In *Food Flavors* (pp. 47–76). CRC Press. https://doi.org/10.1201/b11187-7

Suárez-Quiroz, M., Louise, B. D., Gonzalez-Rios, O., Barel, M., Guyot, B., Schorr-Galindo, S. and Guiraud, J. P. (2005). The Impact of Roasting on The Ochratoxin a Content of Coffee. *International Journal of Food Science & Technology*, *40*(6): 605-611.

Srikandi, S., Kristanti, A. W., & Sutamihardja, R. (2019). Tingkat Kematangan Biji Kopi Arabica (*Coffea arabica* L.) dalam Menghasilkan Kadar Kafein. *Jurnal Sains Natural*, *9*(1): 22. https://doi.org/10.31938/jsn.v9i1.189.

Supriana, N., Ahmad, U., Samsudin, S., & Purwanto, E. H. (2020). Pengaruh Metode Pengolahan dan Suhu Penyangraian terhadap Karakter Fisiko-Kimia Kopi Robusta. *Jurnal Tanaman Industri Dan Penyegar,* 7(2), 61. https://doi.org/10.21082/jtidp.v7n2.2020.p61-72

Tajik, N., Tajik, M., Mack, I., & Enck, P. (2017). The Potential Effects of Chlorogenic Acid, The Main Phenolic Components in Coffee, on Health: A Comprehensive Review of The Literature. *European Journal of Nutrition*, *56*(7), 2215–2244.

Takayama, M., & Ezura, H. (2015). How and Why Does Tomato Accumulate a Large Amount of GABA in The Fruit? *Frontiers in Plant Science*, *6*. https://doi.org/10.3389/fpls.2015.00612

Tarigan, E dan Juniaty, T. (2017). Pengaruh Tingkat Kematangan Buah Serta lama Fermentasi dan Penyangraian Biji Terhadap Karakter Fisikokimia Kopi Robusta. *Jurnal Tanaman Industri dan Penyegar, 4*(3).

Toci, A. T., & Farah, A. (2014). Volatile Fingerprint of Brazilian Defective Coffee Seeds: Corroboration of Potential Marker Compounds and Identification of New Low Quality Indicators. *Food Chemistry*, *153*, 298–314. https://doi.org/10.1016/j.foodchem.2013.12.040

van Gemert, L. J. (2011). Odour Thresholds - Compilations of Odour Threshold Values in Air, Water and Other media. Zeist, The Netherlands: Oliemans Punter & Partners BV

Wahid, N., & Bounoua, L. (2013). The relationship between seed weight, germination and biochemical reserves of maritime pine (Pinus pinaster Ait.) in Morocco. New Forests, 44(3), 385–397. https://doi.org/10.1007/s11056-012-9348-2

Wang, Y., Wang, X., Hu, G., Al-Romaima, A., Peng, X., Li, J., Bai, X., Li, Z., & Qiu, M.
(2023). Anaerobic Germination of *Green coffee beans*: A Novel Strategy to Improve The Quality of Commercial Arabica Coffee. *Current Research in Food Science*, *6*. https://doi.org/10.1016/j.crfs.2023.100461

Waters. (2012). *Acquity UPLC H-Class and H-Class Bio Amino Acid Analysis System Guide*. Irlandia: Waters Corporation

Wiyono, E. V. (2019). Karakteristik Fisik dan Kimia Kopi Rakyat di Kawasan Pegunungan Argopuro – Jember: Universitas Jember.

Wu, H., Lu, P., Liu, Z., Sharifi-Rad, J., & Suleria, H. A. R. (2022). Impact of Roasting on The Phenolic and Volatile Compounds in Coffee Beans. *Food Science & Nutrition*, *10*(7), 2408–2425. https://doi.org/10.1002/fsn3.2849

Yokawati, Y. E. A., & Ade, W. (2019). Pengelolaan Panen dan Pascapanen Kopi Arabika (*Coffee arabica* L.) di Kebun Kalisat Jampit, Bondowoso, Jawa Timur. *Bul. Agrohorti*, *7*(3): 343-350.

Yusianto. (2016). Panen dan Pengolahan Produk Hulu Kopi dalam: Kopi "Sejarah, Botani, Proses Produksi, Pengolahan, Produk Hilir dan Sistem Kemitraan. Yogyakarta: UGM Press.

Yusmarini. (2011). Senyawa Polifenol pada Kopi: Pengaruh Pengolahan, Metabolisme dan Hubungannya dengan Kesehatan. *Jurnal SAGU*, *10*(2): 22-30.

Zakidou, P., Plati, F., Matsakidou, A., Varka, E. M., Blekas, G., & Paraskevopoulou, A. (2021). Single Origin Coffee Aroma: From Optimized Flavor Protocols and Coffee Customization to Instrumental Volatile Characterization and Chemometrics. *Molecules*, *26*(15). https://doi.org/10.3390/molecules26154609X

Zhang, K., Cheng, J., Hong, Q., Dong, W., Chen, X., Wu, G., & Zhang, Z. (2022). Identification of Changes in The Volatile Compounds of Robusta Coffee Beans During Drying Based on HS-SPME/GC-MS and E-nose Analyses with The Aid of Chemometrics. *LWT*, 161, 113317. https://doi.org/10.1016/j.lwt.2022.113317

Zhao, M., Zhang, H., Yan, H., Qiu, L., & Baskin, C. C. (2018). Mobilization and Role of Starch, Protein, and Fat Reserves during Seed Germination of Six Wild Grassland Species. *Frontiers in Plant Science, 9*. https://doi.org/10.3389/fpls.2018.00234

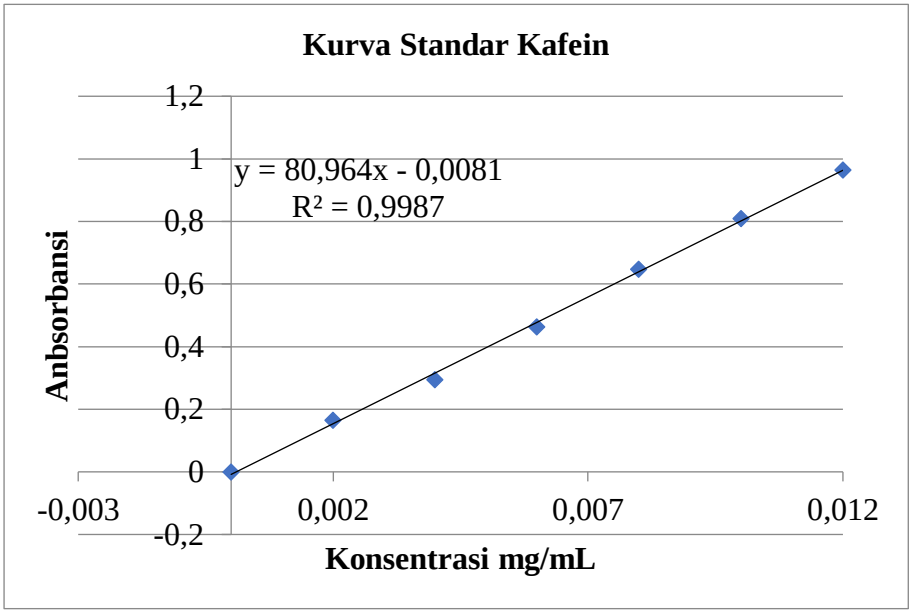
LAMPIRAN

Lampiran A. Data Hasil Pengujian Kadar Kafein

Tabel Lampiran A. Absorbansi Larutan Standar Kafein

Standar	Konsentrasi (mg/mL)	Absorbansi
0	0	0
1	0,002	0,165
2	0,004	0,295
3	0,006	0,463
4	0,008	0,647
5	0,01	0,81
6	0,012	0,964

Gambar Lampiran A. Kurva Standar Kafein



Tabel Lampiran A1. Hasil Pengujian Kadar Kafein

Perlakuan	Abs Kafein	Konsentrasi (mg/mL)	Panjang Gelombang (nm)	Berat (gram)/100 mL Etanol 70%	FP	%Kafein	Rata-rata %Kafein	%Penurunan Kafein
Asalan-Non Perkecambahan (U1)	0,717	0,224	273	1,087	25	2,06	2,06	
Asalan-Non Perkecambahan (U2)	0,719	0,224				2,06		
Asalan-Non Perkecambahan (U3)	0,721	0,225				2,07		
Kuning-Non Perkecambahan (U1)	0,679	0,212	273	1,081	25	1,96	1,96	
Kuning-Non Perkecambahan (U2)	0,68	0,212				1,96		
Kuning-Non Perkecambahan (U3)	0,681	0,212				1,97		
Merah-Non Perkecambahan (U1)	0,57	0,178	273	1,063	25	1,68	1,68	
Merah-Non Perkecambahan (U2)	0,573	0,179				1,69		
Merah-Non Perkecambahan (U3)	0,572	0,179				1,68		
Asalan-Perkecambahan (U1)	0,432	0,136	273	1,017	25	1,34	1,34	35,35
Asalan-Perkecambahan (U2)	0,431	0,136				1,33		
Asalan-Perkecambahan (U3)	0,432	0,136				1,34		

Kuning-Perkecambahan (U1)	0,517	0,162	273	1,05	25	1,54	1,54	21,29
Kuning-Perkecambahan (U2)	0,518	0,162				1,55		
Kuning-Perkecambahan (U3)	0,519	0,163				1,55		
Merah-Perkecambahan (U1)	0,352	0,111	273	1,007	25	1,10	1,11	34,40
Merah-Perkecambahan (U2)	0,353	0,111				1,11		
Merah-Perkecambahan (U3)	0,354	0,112				1,11		

Tabel Lampiran A2. Hasil Analisis Sidik Ragam (ANOVA) Kadar Kafein

Tests of Between-Subjects Effects

Dependent Variable: KAFEIN

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Model	49.083[a]	6	8.181	588998.392	.000
TINGKAT_KEMATANGAN	.452	2	.226	16274.752	.000
PERLAKUAN	1.487	1	1.487	107081.104	.000
TINGKAT_KEMATANGAN * PERLAKUAN	.073	2	.037	2628.544	.000
Error	.000	12	1.389E-5		
Total	49.083	18			

a. R Squared = 1,000 (Adjusted R Squared = 1,000)

Tabel Lampiran A3. Hasil Uji Lanjut dengan Metode *Duncan* Kadar Kafein berdasarkan Tingkat Kematangan

KAFEIN

Duncan[a,b]

TINGKAT_KEMATANGAN	N	Subset 1	Subset 2	Subset 3
A3	6	1.3953		
A1	6		1.7000	
A2	6			1.7560
Sig.		1.000	1.000	1.000

Means for groups in homogeneous subsets are displayed.
Based on observed means.
The error term is Mean Square(Error) = 1,39E-005.

a. Uses Harmonic Mean Sample Size = 6,000.

b. Alpha = ,05.

Tabel Lampiran A4. Hasil Uji Lanjut dengan Metode *Duncan* Kadar Kafein

KAFEIN

Duncan[a]

		Subset for alpha = 0.05					
TKxPERLAKUAN	N	1	2	3	4	5	6
A3B2	3	1.1070					
A1B2	3		1.3350				
A2B2	3			1.5470			
A3B1	3				1.6837		
A2B1	3					1.9650	
A1B1	3						2.0650
Sig.		1.000	1.000	1.000	1.000	1.000	1.000

Means for groups in homogeneous subsets are displayed.

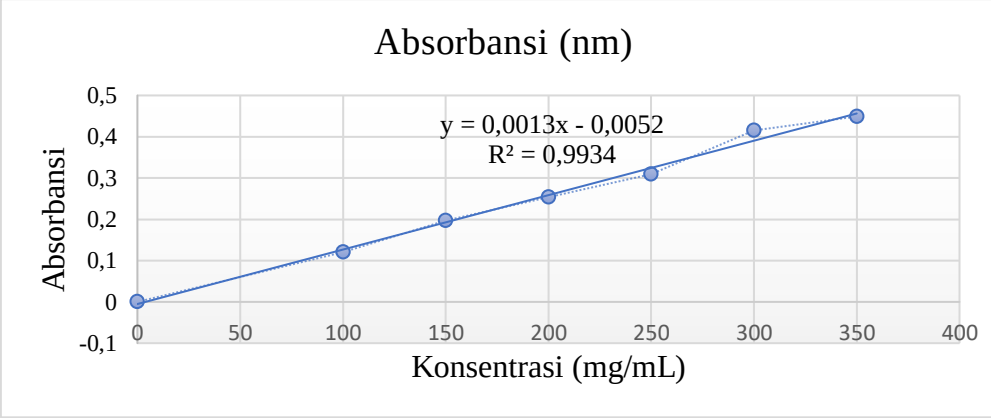
a. Uses Harmonic Mean Sample Size = 3,000.

Lampiran B. Data Hasil Pengujian Kadar Fenol

Tabel Lampiran B. Absorbansi Larutan Standar Fenol

Konsentrasi	Absorbansi (nm)
0	0
100	0,12
150	0,197
200	0,254
250	0,309
300	0,415
350	0,449

Gambar Lampiran B. Gambar Kurva Standar Fenol



Tabel Lampiran B1. Hasil Pengujian Kadar Fenol

Panjang Gelombang (nm)	Perlakuan	Absorbansi (y)	Preparasi awal	Berat hasil evaporasi (gram)	Berat sampel ditimbang (gr)/10 mL etanol 70%	FP	Konsentrasi (µg/mL)	Total fenol dalam 0,1 gr sampel (µg)	Total fenol dalam 1 gr (mg)	Total fenol dalam berat evaporasi (mg)	Total fenol mg GAE/gr	Rata-rata
782	Merah-Non Germinasi (U1)	0,263	25 gr/100 mL etanol 70%	0,13	0,1	10	2063,076923	20630,76923	206,3076923	26,82	206,3076923	204,7692308
	Merah-Non Germinasi (U2)	0,264		0,13	0,1		2070,769231	20707,69231	207,0769231	26,92	207,0769231	
	Merah-Non Germinasi (U3)	0,256		0,13	0,1		2009,230769	20092,30769	200,9230769	26,12	200,9230769	
	Kuning-Non Germinasi (U1)	0,211		0,36	0,1		1663,076923	16630,76923	166,3076923	59,87076923	166,3076923	152,4615385
	Kuning-Non Germinasi (U2)	0,187		0,36	0,1		1478,461538	14784,61538	147,8461538	53,22461538	147,8461538	
	Kuning-Non Germinasi (U3)	0,181		0,36	0,1		1432,307692	14323,07692	143,2307692	51,56307692	143,2307692	
	Pelangi-Non Germinasi (U1)	0,262		0,13	0,1		2055,384615	20553,84615	205,5384615	26,72	205,5384615	223,7435897
	Pelangi-Non Germinasi (U2)	0,282		0,13	0,1		2209,230769	22092,30769	220,9230769	28,72	220,9230769	
	Pelangi-Non Germinasi (U3)	0,313		0,13	0,1		2447,692308	24476,92308	244,7692308	31,82	244,7692308	
	Merah-Germinasi (U1)	0,246		0,95	0,1		1932,307692	19323,07692	193,2307692	183,5692308	193,2307692	199,1282051
	Merah-Germinasi (U2)	0,252		0,95	0,1		1978,461538	19784,61538	197,8461538	187,9538462	197,8461538	
	Merah-Germinasi (U3)	0,263		0,95	0,1		2063,076923	20630,76923	206,3076923	195,9923077	206,3076923	
	Kuning-Germiansi (U1)	0,252		1,38	0,1		1978,461538	19784,61538	197,8461538	273,0276923	197,8461538	203,2307692
	Kuning-Germinasi (U2)	0,271		1,38	0,1		2124,615385	21246,15385	212,4615385	293,1969231	212,4615385	
	Kuning-Germinasi (U3)	0,254		1,38	0,1		1993,846154	19938,46154	199,3846154	275,1507692	199,3846154	
	Pelangi-Germinasi (U1)	0,238		1,11	0,1		1870,769231	18707,69231	187,0769231	207,6553846	187,0769231	192,2051282
	Pelangi-Germinasi (U2)	0,254		1,11	0,1		1993,846154	19938,46154	199,3846154	221,3169231	199,3846154	
	Pelangi-Germinasi (U3)	0,242		1,11	0,1		1901,538462	19015,38462	190,1538462	211,0707692	190,1538462	

Tabel Lampiran B2. Hasil Analisis Sidik Ragam (ANOVA) Kadar Fenol

Tests of Between-Subjects Effects

Dependent Variable: FENOL

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Model	699401.825[a]	6	116566.971	998.281	.000
TINGKAT_KEMATANGAN	3049.867	2	1524.934	13.060	.001
PERLAKUAN	92.349	1	92.349	.791	.391
TINGKAT_KEMATANGAN * PERLAKUAN	5313.639	2	2656.819	22.753	.000
Error	1401.212	12	116.768		
Total	700803.037	18			

a. R Squared = ,998 (Adjusted R Squared = ,997)

Tabel Lampiran B3. Hasil Analisis Uji Lanjut dengan Metode *Duncan* Kadar Fenol berdasarkan Tingkat Kematangan

FENOL

Duncan[a,b]

TINGKAT_KEMATANGAN	N	Subset 1	Subset 2
A2	6	177.8463	
A3	6		201.9488
A1	6		207.9743
Sig.		1.000	.353

Means for groups in homogeneous subsets are displayed.
Based on observed means.
The error term is Mean Square(Error) = 116,768.

a. Uses Harmonic Mean Sample Size = 6,000.

b. Alpha = ,05.

Tabel Lampiran B4. Hasil Uji Lanjut dengan Metode *Duncan* Kadar Fenol

FENOL

Duncan[a]

TKxPERLAKUAN	N	Subset for alpha = 0.05 1	2	3
A2B0	3	152.4617		
A1B1	3		192.2053	
A3B1	3		199.1283	
A2B1	3		203.2310	
A3B0	3		204.7693	204.7693
A1B0	3			223.7433
Sig.		1.000	.211	.053

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3,000.

Lampiran C. Data Hasil Pengujian Kadar GABA (*γ-Aminobutyric Acid*)

Tabel Lampiran C1. Hasil Pengujian Kadar GABA

Sampel	UI (mg/kg)	U2 (mg/kg)	% GABA (U1)	%GABA (U2)	Rata-rata Kadar Gaba
Merah-Non Germinasi	1956,39	1967,97	0,195639	0,196797	1962,18
Kuning-Non Germinasi	2089,02	2031,49	0,208902	0,203149	2060,255
Pelangi-Non Germinasi	2272,91	2268,44	0,227291	0,226844	2270,675
Merah-Germinasi	2037,63	2038,57	0,203763	0,203857	2038,1
Kuning-Germinasi	2346,31	2346,31	0,234631	0,234631	2346,31
Pelangi-Germinasi	2562,17	2563,15	0,256217	0,256315	2562,66

Tabel Lampiran C2. Hasil Analisis Sidik Ragam (ANOVA) GABA (*γ-Aminobutyric Acid*)

Tests of Between-Subjects Effects

Dependent Variable: GABA

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Model	.587[a]	6	.098	43445.000	.000
TINGKAT_KEMATANGAN	.004	2	.002	784.148	.000
PERLAKUAN	.001	1	.001	635.593	.000
TINGKAT_KEMATANGAN * PERLAKUAN	.000	2	.000	68.593	.000
Error	1.350E-5	6	2.250E-6		
Total	.587	12			

a. R Squared = 1,000 (Adjusted R Squared = 1,000)

Tabel Lampiran C3. Hasil Analisis Uji Lanjut dengan Metode *Duncan* GABA (*γ-Aminobutyric Acid*) berdasarkan Tingkat Kematangan

GABA

Duncan[a,b]

TINGKAT_KEMATANGAN	N	Subset 1	2	3
A3	4	2000.1400		
A2	4		2202.8925	
A1	4			2416.6675
Sig.		1.000	1.000	1.000

Means for groups in homogeneous subsets are displayed.
Based on observed means.
The error term is Mean Square(Error) = 289.005.

a. Uses Harmonic Mean Sample Size = 4.000.

b. Alpha = ,05.

Tabel Lampiran C4. Hasil Analisis Uji Lanjut dengan Metode *Duncan* GABA (*γ-Aminobutyric Acid*)

GABA

Duncan[a]

TKxPERLAKUAN	N	Subset for alpha = 0.05 1	2	3	4	5
A3B0	2	1962.1800				
A3B1	2		2038.1000			
A2B0	2		2060.2550			
A1B0	2			2270.6750		
A2B1	2				2345.5300	
A1B1	2					2562.6600
Sig.		1.000	.240	1.000	1.000	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 2.000.

Lampiran D. Data Hasil Pengujian Profil Asam Amino

Gambar Lampiran D1. Profil Asam Amino Sampel Kopi Ceri Asalan Tanpa Perkecambahan

SIG

28.1/F-PP Revisi 4

No	Parameter	Unit	Simplo	Duplo	Limit Of Detection	Method
1	L-Alanin	mg / kg	4241.77	4253.86	-	18-5-17/MU/SMM-SIG (UPLC-PDA)
2	L-Arginin	mg / kg	5029.23	5037.65	-	18-5-17/MU/SMM-SIG (UPLC-PDA)
3	L-Asam Aspartat	mg / kg	7620.97	7662.15	-	18-5-17/MU/SMM-SIG (UPLC-PDA)
4	Glisin	mg / kg	6360.26	6380.48	-	18-5-17/MU/SMM-SIG (UPLC-PDA)
5	L-Asam Glutamat	mg / kg	14827.23	14909.21	-	18-5-17/MU/SMM-SIG (UPLC-PDA)
6	L-Histidin	mg / kg	2994.16	2996.55	-	18-5-17/MU/SMM-SIG (UPLC-PDA)
7	L-Isoleusin	mg / kg	2388.24	2383.98	-	18-5-17/MU/SMM-SIG (UPLC-PDA)
8	L-Leusin	mg / kg	6983.72	7014.00	-	18-5-17/MU/SMM-SIG (UPLC-PDA)
9	L-Lisin	mg / kg	4348.90	4352.47	-	18-5-17/MU/SMM-SIG (UPLC-PDA)
10	L-Valin	mg / kg	3631.84	3646.53	-	18-5-17/MU/SMM-SIG (UPLC-PDA)
11	L-Fenilalanin	mg / kg	4765.68	4758.41	-	18-5-17/MU/SMM-SIG (UPLC-PDA)
12	L-Prolin	mg / kg	4747.00	4760.25	-	18-5-17/MU/SMM-SIG (UPLC-PDA)
13	L-Serin	mg / kg	5579.86	5594.99	-	18-5-17/MU/SMM-SIG (UPLC-PDA)
14	L-Treonin	mg / kg	3374.56	3386.63	-	18-5-17/MU/SMM-SIG (UPLC-PDA)
15	L-Tirosin	mg / kg	2685.80	2670.01	-	18-5-17/MU/SMM-SIG (UPLC-PDA)

PT SARASWANTI INDO GENETECH
Graha SIG Jl. Rasamala No. 20 Taman Yasmin Bogor 16113
Tel. +62 251 7532 348 Hotline. +62 821 11 516 516
www.siglaboratory.com

Gambar Lampiran D2. Profil Asam Amino Kopi Ceri Semi Matang Tanpa Perkecambahan

SIG SARASWANTI

28.1/F-PP Revisi 4

No	Parameter	Unit	Simplo	Duplo	Limit Of Detection	Method
1	L-Alanin	mg / kg	4466.07	4478.56	-	18-S-17/MU/SMM-SIG (UPLC-PDA)
2	L-Arginin	mg / kg	5347.63	5357.46	-	18-S-17/MU/SMM-SIG (UPLC-PDA)
3	L-Asam Aspartat	mg / kg	8245.43	8264.37	-	18-S-17/MU/SMM-SIG (UPLC-PDA)
4	Glisin	mg / kg	6570.93	6584.05	-	18-S-17/MU/SMM-SIG (UPLC-PDA)
5	L-Asam Glutamat	mg / kg	16263.80	16323.30	-	18-S-17/MU/SMM-SIG (UPLC-PDA)
6	L-Histidin	mg / kg	3039.34	3035.75	-	18-S-17/MU/SMM-SIG (UPLC-PDA)
7	L-Isoleusin	mg / kg	2579.63	2569.31	-	18-S-17/MU/SMM-SIG (UPLC-PDA)
8	L-Leusin	mg / kg	7486.41	7497.29	-	18-S-17/MU/SMM-SIG (UPLC-PDA)
9	L-Lisin	mg / kg	4540.13	4535.50	-	18-S-17/MU/SMM-SIG (UPLC-PDA)
10	L-Valin	mg / kg	3906.98	3902.70	-	18-S-17/MU/SMM-SIG (UPLC-PDA)
11	L-Fenilalanin	mg / kg	5071.24	5072.84	-	18-S-17/MU/SMM-SIG (UPLC-PDA)
12	L-Prolin	mg / kg	5035.96	5045.95	-	18-S-17/MU/SMM-SIG (UPLC-PDA)
13	L-Serin	mg / kg	6040.64	6057.17	-	18-S-17/MU/SMM-SIG (UPLC-PDA)
14	L-Treonin	mg / kg	3576.38	3579.71	-	18-S-17/MU/SMM-SIG (UPLC-PDA)
15	L-Tirosin	mg / kg	3373.35	3362.48	-	18-S-17/MU/SMM-SIG (UPLC-PDA)

PT SARASWANTI INDO GENETECH
Graha SIG Jl. Rasamala No. 20 Taman Yasmin Bogor 16113
Tel. +62 251 7532 348 Hotline. +62 821 11 516 516
www.siglaboratory.com

Gambar Lampiran D3. Profil Asam Amino Kopi Ceri Matang Tanpa Perkecambahan

SIG

28.1/F-PP Revisi 4

No	Parameter	Unit	Simplo	Duplo	Limit Of Detection	Method
1	L-Alanin	mg / kg	4555.69	4565.16	-	18-5-17/MU/SMM-SIG (UPLC-PDA)
2	L-Arginin	mg / kg	5325.04	5335.31	-	18-5-17/MU/SMM-SIG (UPLC-PDA)
3	L-Asam Aspartat	mg / kg	8802.98	8836.34	-	18-5-17/MU/SMM-SIG (UPLC-PDA)
4	Glisin	mg / kg	6931.86	6951.86	-	18-5-17/MU/SMM-SIG (UPLC-PDA)
5	L-Asam Glutamat	mg / kg	16159.65	16208.08	-	18-5-17/MU/SMM-SIG (UPLC-PDA)
6	L-Histidin	mg / kg	3196.20	3203.61	-	18-5-17/MU/SMM-SIG (UPLC-PDA)
7	L-Isoleusin	mg / kg	2535.93	2531.76	-	18-5-17/MU/SMM-SIG (UPLC-PDA)
8	L-Leusin	mg / kg	7178.18	7194.94	-	18-5-17/MU/SMM-SIG (UPLC-PDA)
9	L-Lisin	mg / kg	4847.29	4856.60	-	18-5-17/MU/SMM-SIG (UPLC-PDA)
10	L-Valin	mg / kg	3871.74	3874.32	-	18-5-17/MU/SMM-SIG (UPLC-PDA)
11	L-Fenilalanin	mg / kg	4827.26	4823.81	-	18-5-17/MU/SMM-SIG (UPLC-PDA)
12	L-Prolin	mg / kg	5087.74	5099.30	-	18-5-17/MU/SMM-SIG (UPLC-PDA)
13	L-Serin	mg / kg	5577.39	5595.46	-	18-5-17/MU/SMM-SIG (UPLC-PDA)
14	L-Treonin	mg / kg	3619.40	3624.57	-	18-5-17/MU/SMM-SIG (UPLC-PDA)
15	L-Tirosin	mg / kg	3148.24	3124.50	-	18-5-17/MU/SMM-SIG (UPLC-PDA)

PT SARASWANTI INDO GENETECH
Graha SIG Jl. Rasamala No. 20 Taman Yasmin Bogor 16113
Tel. +62 251 7532 348 Hotline. +62 821 11 516 516
www.siglaboratory.com

Gambar Lampiran D4. Profil Asam Amino Kopi Ceri Asalan dengan Perkecambahan

SIG

28.1/F-PP Revisi 4

No	Parameter	Unit	Simplo	Duplo	Limit Of Detection	Method
1	L-Alanin	mg / kg	5105.79	5118.21	-	18-S-17/MU/SMM-SIG (UPLC-PDA)
2	L-Arginin	mg / kg	6402.03	6414.10	-	18-S-17/MU/SMM-SIG (UPLC-PDA)
3	L-Asam Aspartat	mg / kg	9673.37	9693.22	-	18-S-17/MU/SMM-SIG (UPLC-PDA)
4	Glisin	mg / kg	7773.98	7787.18	-	18-S-17/MU/SMM-SIG (UPLC-PDA)
5	L-Asam Glutamat	mg / kg	23103.78	23199.81	-	18-S-17/MU/SMM-SIG (UPLC-PDA)
6	L-Histidin	mg / kg	3438.97	3439.81	-	18-S-17/MU/SMM-SIG (UPLC-PDA)
7	L-Isoleusin	mg / kg	2963.10	2967.42	-	18-S-17/MU/SMM-SIG (UPLC-PDA)
8	L-Leusin	mg / kg	8565.81	8576.91	-	18-S-17/MU/SMM-SIG (UPLC-PDA)
9	L-Lisin	mg / kg	5426.49	5422.35	-	18-S-17/MU/SMM-SIG (UPLC-PDA)
10	L-Valin	mg / kg	4445.21	4447.81	-	18-S-17/MU/SMM-SIG (UPLC-PDA)
11	L-Fenilalanin	mg / kg	5931.46	5943.13	-	18-S-17/MU/SMM-SIG (UPLC-PDA)
12	L-Prolin	mg / kg	5771.64	5782.78	-	18-S-17/MU/SMM-SIG (UPLC-PDA)
13	L-Serin	mg / kg	6330.65	6335.88	-	18-S-17/MU/SMM-SIG (UPLC-PDA)
14	L-Treonin	mg / kg	4112.51	4110.98	-	18-S-17/MU/SMM-SIG (UPLC-PDA)
15	L-Tirosin	mg / kg	3434.43	3415.67	-	18-S-17/MU/SMM-SIG (UPLC-PDA)

PT SARASWANTI INDO GENETECH
Graha SIG Jl. Rasamala No. 20 Taman Yasmin Bogor 16113
Tel. +62 251 7532 348 Hotline. +62 821 11 516 516
www.siglaboratory.com

Gambar Lampiran D5. Profil Asam Amino Kopi Ceri Semi Matang dengan Perkecambahan

SIG SARASWANTI

28.1/F-PP Revisi 4

No	Parameter	Unit	Simplo	Duplo	Limit Of Detection	Method
1	L-Alanin	mg / kg	4609.32	4617.70	-	18-S-17/MU/SMM-SIG (UPLC-PDA)
2	L-Arginin	mg / kg	5474.15	5469.54	-	18-S-17/MU/SMM-SIG (UPLC-PDA)
3	L-Asam Aspartat	mg / kg	8006.60	8036.25	-	18-S-17/MU/SMM-SIG (UPLC-PDA)
4	Glisin	mg / kg	6962.60	6978.81	-	18-S-17/MU/SMM-SIG (UPLC-PDA)
5	L-Asam Glutamat	mg / kg	17485.05	17550.64	-	18-S-17/MU/SMM-SIG (UPLC-PDA)
6	L-Histidin	mg / kg	3138.87	3142.19	-	18-S-17/MU/SMM-SIG (UPLC-PDA)
7	L-Isoleusin	mg / kg	2666.44	2664.81	-	18-S-17/MU/SMM-SIG (UPLC-PDA)
8	L-Leusin	mg / kg	7972.92	7984.73	-	18-S-17/MU/SMM-SIG (UPLC-PDA)
9	L-Lisin	mg / kg	5097.36	5095.22	-	18-S-17/MU/SMM-SIG (UPLC-PDA)
10	L-Valin	mg / kg	4060.93	4057.09	-	18-S-17/MU/SMM-SIG (UPLC-PDA)
11	L-Fenilalanin	mg / kg	5171.16	5132.11	-	18-S-17/MU/SMM-SIG (UPLC-PDA)
12	L-Prolin	mg / kg	5386.63	5395.93	-	18-S-17/MU/SMM-SIG (UPLC-PDA)
13	L-Serin	mg / kg	5952.06	5962.58	-	18-S-17/MU/SMM-SIG (UPLC-PDA)
14	L-Treonin	mg / kg	3689.69	3694.01	-	18-S-17/MU/SMM-SIG (UPLC-PDA)
15	L-Tirosin	mg / kg	2721.21	2700.32	-	18-S-17/MU/SMM-SIG (UPLC-PDA)

PT SARASWANTI INDO GENETECH
Graha SIG Jl. Rasamala No. 20 Taman Yasmin Bogor 16113
Tel. +62 251 7532 348 Hotline. +62 821 11 516 516
www.siglaboratory.com

Gambar Lampiran D6. Profil Asam Amino Kopi Ceri Matang dengan Perkecambahan

SIG SARASWANTI

28.1/F-PP Revisi 4

No	Parameter	Unit	Simplo	Duplo	Limit Of Detection	Method
1	L-Alanin	mg / kg	4761.56	4787.09	-	18-5-17/MU/SMM-SIG (UPLC-PDA)
2	L-Arginin	mg / kg	5469.53	5481.21	-	18-5-17/MU/SMM-SIG (UPLC-PDA)
3	L-Asam Aspartat	mg / kg	8403.50	8440.88	-	18-5-17/MU/SMM-SIG (UPLC-PDA)
4	Glisin	mg / kg	7230.11	7265.96	-	18-5-17/MU/SMM-SIG (UPLC-PDA)
5	L-Asam Glutamat	mg / kg	17178.09	17290.20	-	18-5-17/MU/SMM-SIG (UPLC-PDA)
6	L-Histidin	mg / kg	3251.09	3262.86	-	18-5-17/MU/SMM-SIG (UPLC-PDA)
7	L-Isoleusin	mg / kg	2697.83	2702.67	-	18-5-17/MU/SMM-SIG (UPLC-PDA)
8	L-Leusin	mg / kg	7959.07	7989.36	-	18-5-17/MU/SMM-SIG (UPLC-PDA)
9	L-Lisin	mg / kg	5187.03	5208.05	-	18-5-17/MU/SMM-SIG (UPLC-PDA)
10	L-Valin	mg / kg	4088.16	4103.99	-	18-5-17/MU/SMM-SIG (UPLC-PDA)
11	L-Fenilalanin	mg / kg	5075.80	5069.52	-	18-5-17/MU/SMM-SIG (UPLC-PDA)
12	L-Prolin	mg / kg	5476.25	5496.84	-	18-5-17/MU/SMM-SIG (UPLC-PDA)
13	L-Serin	mg / kg	6041.01	6068.18	-	18-5-17/MU/SMM-SIG (UPLC-PDA)
14	L-Treonin	mg / kg	3813.11	3826.91	-	18-5-17/MU/SMM-SIG (UPLC-PDA)
15	L-Tirosin	mg / kg	2794.54	2777.93	-	18-5-17/MU/SMM-SIG (UPLC-PDA)

PT SARASWANTI INDO GENETECH
Graha SIG Jl. Rasamala No. 20 Taman Yasmin Bogor 16113
Tel. +62 251 7532 348 Hotline. +62 821 11 516 516
www.siglaboratory.com

Tabel Lampiran D1. Rekapitulasi Kandungan Asam Amino

Asam Amino	Pelangi-Non Germinasi	Kuning-Non Germinasi	Merah-Non Germinasi	Merah-Germinasi	Kuning-Germinasi	Pelangi-Germinasi
L-Alanin	4247,82	4472,32	4560,43	5112,5	4613,51	4774,33
L-Arginin	5033,44	5352,55	5330,18	6408,07	5471,85	5475,37
L-Asam aspartat	7641,56	8254,9	8819,66	9683,3	8021,43	8422,19
Glisin	6370,37	6577,49	6941,86	7780,58	6970,71	7248,04
L-Asam glutamat	14868,22	16293,55	16183,87	23151,8	17517,85	17234,15
L-Histidin	2995,36	3037,55	3199,91	3439,39	3140,53	3256,98
L-Isoleusin	2386,11	2574,47	2533,85	2965,26	2665,63	2700,25
L-Leusin	6998,86	7491,85	7186,56	8571,36	7978,83	7974,22
L-Lisin	4350,69	4537,82	4851,95	5424,42	5096,29	5197,54
L-Valin	3639,19	3904,84	3873,03	4446,51	4059,01	4096,08
L-Fenilalanin	4762,05	5072,04	4825,54	5937,3	5151,64	5072,66
L-Prolin	4753,63	5040,96	5093,52	5777,21	5391,28	5486,55
L-Serin	5587,43	6048,91	5586,43	6333,27	5957,32	6054,6
L-Treonin	3380,6	3578,05	3621,99	4111,75	3691,85	3820,01
L-Tirosin	2677,91	3367,92	3136,37	3425,05	2710,77	2786,24

Tabel Lampiran D2. Hasil Analisis Sidik Ragam (ANOVA) Asam Amino

Tests of Between-Subjects Effects

Dependent Variable: ALANIN

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Model	258113806[a]	6	43018967.64	411471.200	.000
TINGKAT_KEMATANGAN	45947.915	2	22973.957	219.743	.000
PERLAKUAN	496169.934	1	496169.934	4745.805	.000
TINGKAT_KEMATANGAN * PERLAKUAN	317312.890	2	158656.445	1517.530	.000
Error	627.295	6	104.549		
Total	258114433.2	12			

a. R Squared = 1,000 (Adjusted R Squared = 1,000)

Tests of Between-Subjects Effects

Dependent Variable: ARGININ

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Model	366760166[a]	6	61126694.38	1272682.676	.000
TINGKAT_KEMATANGAN	261877.060	2	130938.530	2726.194	.000
PERLAKUAN	895571.458	1	895571.458	18646.163	.000
TINGKAT_KEMATANGAN * PERLAKUAN	1029336.511	2	514668.255	10715.603	.000
Error	288.179	6	48.030		
Total	366760454.4	12			

a. R Squared = 1,000 (Adjusted R Squared = 1,000)

Tests of Between-Subjects Effects

Dependent Variable: ASAM_ASPARTAT

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Model	866731922[a]	6	144455320.4	296937.098	.000
TINGKAT_KEMATANGAN	679514.506	2	339757.253	698.393	.000
PERLAKUAN	663442.808	1	663442.808	1363.749	.000
TINGKAT_KEMATANGAN * PERLAKUAN	3717731.979	2	1858865.989	3821.017	.000
Error	2918.907	6	486.485		
Total	866734841.4	12			

a. R Squared = 1,000 (Adjusted R Squared = 1,000)

Tests of Between-Subjects Effects

Dependent Variable: GLISIN

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Model	587393147[a]	6	97898857.86	434589.453	.000
TINGKAT_KEMATANGAN	258869.731	2	129434.866	574.583	.000
PERLAKUAN	1483470.720	1	1483470.720	6585.375	.000
TINGKAT_KEMATANGAN * PERLAKUAN	753582.691	2	376791.345	1672.640	.000
Error	1351.605	6	225.267		
Total	587394498.8	12			

a. R Squared = 1,000 (Adjusted R Squared = 1,000)

Tests of Between-Subjects Effects

Dependent Variable: ASAM_GLUTAMAT

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Model	3776714966[a]	6	629452494.3	195184.634	.000
TINGKAT_KEMATANGAN	13015228.03	2	6507614.014	2017.922	.000
PERLAKUAN	37158177.14	1	37158177.14	11522.244	.000
TINGKAT_KEMATANGAN * PERLAKUAN	34061423.97	2	17030711.98	5280.992	.000
Error	19349.448	6	3224.908		
Total	3776734315	12			

a. R Squared = 1,000 (Adjusted R Squared = 1,000)

Tests of Between-Subjects Effects

Dependent Variable: HISTIDIN

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Model	121476883[a]	6	20246147.21	1085733.722	.000
TINGKAT_KEMATANGAN	48033.892	2	24016.946	1287.949	.000
PERLAKUAN	121641.576	1	121641.576	6523.234	.000
TINGKAT_KEMATANGAN * PERLAKUAN	89388.400	2	44694.200	2396.802	.000
Error	111.885	6	18.647		
Total	121476995.1	12			

a. R Squared = 1,000 (Adjusted R Squared = 1,000)

Tests of Between-Subjects Effects

Dependent Variable: ISOLEUSIN

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Model	83862921.5[a]	6	13977153.59	897967.827	.000
TINGKAT_KEMATANGAN	8723.850	2	4361.925	280.234	.000
PERLAKUAN	233361.208	1	233361.208	14992.384	.000
TINGKAT_KEMATANGAN * PERLAKUAN	138053.373	2	69026.686	4434.647	.000
Error	93.392	6	15.565		
Total	83863014.93	12			

a. R Squared = 1,000 (Adjusted R Squared = 1,000)

Tests of Between-Subjects Effects

Dependent Variable: LEUSIN

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Model	714952936[a]	6	119158822.6	572805.381	.000
TINGKAT_KEMATANGAN	91197.475	2	45598.738	219.197	.000
PERLAKUAN	2702049.746	1	2702049.746	12988.955	.000
TINGKAT_KEMATANGAN * PERLAKUAN	628251.554	2	314125.777	1510.026	.000
Error	1248.160	6	208.027		
Total	714954183.9	12			

a. R Squared = 1,000 (Adjusted R Squared = 1,000)

Tests of Between-Subjects Effects

Dependent Variable: LISIN

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Model	290945043[a]	6	48490840.46	995675.327	.000
TINGKAT_KEMATANGAN	89235.310	2	44617.655	916.146	.000
PERLAKUAN	1303904.206	1	1303904.206	26773.412	.000
TINGKAT_KEMATANGAN * PERLAKUAN	280332.874	2	140166.437	2878.075	.000
Error	292.209	6	48.701		
Total	290945335.0	12			

a. R Squared = 1,000 (Adjusted R Squared = 1,000)

Tests of Between-Subjects Effects

Dependent Variable: VALIN

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Model	193033296[a]	6	32172216.01	752763.965	.000
TINGKAT_KEMATANGAN	9489.016	2	4744.508	111.012	.000
PERLAKUAN	467711.671	1	467711.671	10943.495	.000
TINGKAT_KEMATANGAN * PERLAKUAN	257579.446	2	128789.723	3013.416	.000
Error	256.433	6	42.739		
Total	193033552.5	12			

a. R Squared = 1,000 (Adjusted R Squared = 1,000)

Tests of Between-Subjects Effects

Dependent Variable: FENILALANIN

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Model	318422290[a]	6	53070381.65	360237.751	.000
TINGKAT_KEMATANGAN	324675.911	2	162337.956	1101.938	.000
PERLAKUAN	751971.294	1	751971.294	5104.324	.000
TINGKAT_KEMATANGAN * PERLAKUAN	696647.399	2	348323.699	2364.395	.000
Error	883.923	6	147.320		
Total	318423173.8	12			

a. R Squared = 1,000 (Adjusted R Squared = 1,000)

Tests of Between-Subjects Effects

Dependent Variable: PROLIN

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Model	332992711[a]	6	55498785.13	638202.000	.000
TINGKAT_KEMATANGAN	11333.087	2	5666.544	65.162	.000
PERLAKUAN	1040686.431	1	1040686.431	11967.256	.000
TINGKAT_KEMATANGAN * PERLAKUAN	284236.077	2	142118.039	1634.270	.000
Error	521.767	6	86.961		
Total	332993232.6	12			

a. R Squared = 1,000 (Adjusted R Squared = 1,000)

Tests of Between-Subjects Effects

Dependent Variable: SERIN

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Model	422549484[a]	6	70424913.96	495683.959	.000
TINGKAT_KEMATANGAN	72968.746	2	36484.373	256.794	.000
PERLAKUAN	419945.960	1	419945.960	2955.779	.000
TINGKAT_KEMATANGAN * PERLAKUAN	363902.307	2	181951.153	1280.659	.000
Error	852.457	6	142.076		
Total	422550336.2	12			

a. R Squared = 1,000 (Adjusted R Squared = 1,000)

Tests of Between-Subjects Effects

Dependent Variable: TREONIN

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Model	164956567[a]	6	27492761.23	835337.324	.000
TINGKAT_KEMATANGAN	27211.602	2	13605.801	413.397	.000
PERLAKUAN	362602.427	1	362602.427	11017.276	.000
TINGKAT_KEMATANGAN * PERLAKUAN	224143.374	2	112071.687	3405.175	.000
Error	197.473	6	32.912		
Total	164956764.8	12			

a. R Squared = 1,000 (Adjusted R Squared = 1,000)

Tests of Between-Subjects Effects

Dependent Variable: TIROSIN

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Model	110386327[a]	6	18397721.09	110646.878	.000
TINGKAT_KEMATANGAN	19158.268	2	9579.134	57.610	.000
PERLAKUAN	22557.607	1	22557.607	135.665	.000
TINGKAT_KEMATANGAN * PERLAKUAN	1090108.685	2	545054.343	3278.045	.000
Error	997.645	6	166.274		
Total	110387324.2	12			

a. R Squared = 1,000 (Adjusted R Squared = 1,000)

Tabel Lampiran D3. Hasil Analisis Uji Lanjut Metode *Duncan* Asam Amino berdasarkan Tingkat Kematangan

ALANIN

Duncan[a,b]

TINGKAT_KEMATANGAN	N	Subset 1	Subset 2
A2	4	4542.9125	
A3	4		4667.2425
A1	4		4680.1575
Sig.		1.000	.124

Means for groups in homogeneous subsets are displayed.
Based on observed means.
The error term is Mean Square(Error) = 104,549.

a. Uses Harmonic Mean Sample Size = 4,000.

b. Alpha = ,05.

ARGININ

Duncan[a,b]

TINGKAT_KEMATANGAN	N	Subset 1	Subset 2
A3	4	5402.7725	
A2	4	5412.1950	
A1	4		5720.7525
Sig.		.103	1.000

Means for groups in homogeneous subsets are displayed.
Based on observed means.
The error term is Mean Square(Error) = 48,030.

a. Uses Harmonic Mean Sample Size = 4,000.

b. Alpha = ,05.

ASAM_ASPARTAT

Duncan[a,b]

TINGKAT_KEMATANGAN	N	Subset 1	2	3
A2	4	8138.1625		
A3	4		8620.9250	
A1	4			8662.4275
Sig.		1.000	1.000	1.000

Means for groups in homogeneous subsets are displayed.
Based on observed means.
The error term is Mean Square(Error) = 486,485.

a. Uses Harmonic Mean Sample Size = 4,000.

b. Alpha = ,05.

GLISIN

Duncan[a,b]

TINGKAT_KEMATANGAN	N	Subset 1	2
A2	4	6774.0975	
A1	4		7075.4750
A3	4		7094.9475
Sig.		1.000	.116

Means for groups in homogeneous subsets are displayed.
Based on observed means.
The error term is Mean Square(Error) = 225,267.

a. Uses Harmonic Mean Sample Size = 4,000.

b. Alpha = ,05.

ASAM_GLUTAMAT

Duncan[a,b]

TINGKAT_KEMATANGAN	N	Subset 1	2	3
A3	4	16709.0050		
A2	4		16905.6975	
A1	4			19010.0075
Sig.		1.000	1.000	1.000

Means for groups in homogeneous subsets are displayed.
Based on observed means.
The error term is Mean Square(Error) = 3224,908.

a. Uses Harmonic Mean Sample Size = 4,000.

b. Alpha = ,05.

HISTIDIN

Duncan[a,b]

TINGKAT_KEMATANGAN	N	Subset 1	2	3
A2	4	3089.0375		
A1	4		3217.3725	
A3	4			3228.4400
Sig.		1.000	1.000	1.000

Means for groups in homogeneous subsets are displayed.
Based on observed means.
The error term is Mean Square(Error) = 18,647.

a. Uses Harmonic Mean Sample Size = 4,000.

b. Alpha = ,05.

ISOLEUSIN

Duncan[a,b]

TINGKAT_KEMATANGAN	N	Subset 1	2
A3	4	2617.0475	
A2	4	2620.0475	
A1	4		2675.6850
Sig.		.324	1.000

Means for groups in homogeneous subsets are displayed.
Based on observed means.
The error term is Mean Square(Error) = 15,565.

a. Uses Harmonic Mean Sample Size = 4,000.

b. Alpha = ,05.

LEUSIN

Duncan[a,b]

TINGKAT_KEMATANGAN	N	Subset 1	2	3
A3	4	7580.3875		
A2	4		7735.3375	
A1	4			7785.1100
Sig.		1.000	1.000	1.000

Means for groups in homogeneous subsets are displayed.
Based on observed means.
The error term is Mean Square(Error) = 208,027.

a. Uses Harmonic Mean Sample Size = 4,000.

b. Alpha = ,05.

LISIN

Duncan[a,b]

TINGKAT_KEMATANGAN	N	Subset 1	2	3
A2	4	4817.0525		
A1	4		4887.5525	
A3	4			5024.7425
Sig.		1.000	1.000	1.000

Means for groups in homogeneous subsets are displayed.
Based on observed means.
The error term is Mean Square(Error) = 48,701.

a. Uses Harmonic Mean Sample Size = 4,000.

b. Alpha = ,05.

VALIN

Duncan[a,b]

TINGKAT_KEMATANGAN	N	Subset 1	2
A2	4	3981.9250	
A3	4	3984.5525	
A1	4		4042.8475
Sig.		.590	1.000

Means for groups in homogeneous subsets are displayed.
Based on observed means.
The error term is Mean Square(Error) = 42,739.

a. Uses Harmonic Mean Sample Size = 4,000.

b. Alpha = ,05.

FENILALANIN

Duncan[a,b]

TINGKAT_KEMATANGAN	N	Subset 1	2	3
A3	4	4949.0975		
A2	4		5111.8375	
A1	4			5349.6700
Sig.		1.000	1.000	1.000

Means for groups in homogeneous subsets are displayed.
Based on observed means.
The error term is Mean Square(Error) = 147,320.

a. Uses Harmonic Mean Sample Size = 4,000.

b. Alpha = ,05.

PROLIN

Duncan[a,b]

TINGKAT_KEMATANGAN	N	Subset 1	2	3
A2	4	5216.1175		
A1	4		5265.4175	
A3	4			5290.0325
Sig.		1.000	1.000	1.000

Means for groups in homogeneous subsets are displayed.
Based on observed means.
The error term is Mean Square(Error) = 86,961.

a. Uses Harmonic Mean Sample Size = 4,000.

b. Alpha = ,05.

SERIN

Duncan[a,b]

TINGKAT_KEMATANGAN	N	Subset 1	2	3
A3	4	5820.5100		
A1	4		5960.3450	
A2	4			6003.1125
Sig.		1.000	1.000	1.000

Means for groups in homogeneous subsets are displayed.
Based on observed means.
The error term is Mean Square(Error) = 142,076.

a. Uses Harmonic Mean Sample Size = 4,000.

b. Alpha = ,05.

TREONIN

Duncan[a,b]

TINGKAT_KEMATANGAN	N	Subset 1	2	3
A2	4	3634.9475		
A3	4		3720.9975	
A1	4			3746.1700
Sig.		1.000	1.000	1.000

Means for groups in homogeneous subsets are displayed.
Based on observed means.
The error term is Mean Square(Error) = 32,912.

a. Uses Harmonic Mean Sample Size = 4,000.

b. Alpha = ,05.

TIROSIN

Duncan[a,b]

TINGKAT_KEMATANGAN	N	Subset 1	Subset 2
A3	4	2961.3025	
A2	4		3039.3400
A1	4		3051.4775
Sig.		1.000	.231

Means for groups in homogeneous subsets are displayed.
Based on observed means.
The error term is Mean Square(Error) = 166,274.

a. Uses Harmonic Mean Sample Size = 4,000.

b. Alpha = ,05.

Tabel Lampiran D4. Hasil Analisis Uji Lanjut dengan Metode *Duncan* Asam Amino

ALANIN

Duncan[a]

TKxPERLAKUAN	N	Subset for alpha = 0.05					
		1	2	3	4	5	6
A1B0	2	4247.8150					
A2B0	2		4472.3150				
A3B0	2			4560.1600			
A2B1	2				4613.5100		
A3B1	2					4774.3250	
A1B1	2						5112.5000
Sig.		1.000	1.000	1.000	1.000	1.000	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 2,000.

ARGININ

Duncan[a]

TKxPERLAKUAN	N	Subset for alpha = 0.05				
		1	2	3	4	5
A1B0	2	5033.4400				
A3B0	2		5330.1750			
A2B0	2			5352.5450		
A2B1	2				5471.8450	
A3B1	2				5475.3700	
A1B1	2					6408.0650
Sig.		1.000	1.000	1.000	.629	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 2,000.

ASAM_ASPARTAT

Duncan[a]

TKxPERLAKUAN	N	Subset for alpha = 0.05					
		1	2	3	4	5	6
A1B0	2	7641.5600					
A2B1	2		8021.4250				
A2B0	2			8254.9000			
A3B1	2				8422.1900		
A3B0	2					8819.6600	
A1B1	2						9683.2950
Sig.		1.000	1.000	1.000	1.000	1.000	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 2,000.

GLISIN

Duncan[a]

TKxPERLAKUAN	N	Subset for alpha = 0.05				
		1	2	3	4	5
A1B0	2	6370.3700				
A2B0	2		6577.4900			
A3B0	2			6941.8600		
A2B1	2			6970.7050		
A3B1	2				7248.0350	
A1B1	2					7780.5800
Sig.		1.000	1.000	.103	1.000	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 2,000.

ASAM_GLUTAMAT

Duncan[a]

TKxPERLAKUAN	N	Subset for alpha = 0.05				
		1	2	3	4	5
A1B0	2	14868.2200				
A3B0	2		16183.8650			
A2B0	2		16293.5500			
A3B1	2			17234.1450		
A2B1	2				17517.8450	
A1B1	2					23151.7950
Sig.		1.000	.102	1.000	1.000	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 2,000.

HISTIDIN

Duncan[a]

TKxPERLAKUAN	N	Subset for alpha = 0.05					
		1	2	3	4	5	6
A1B0	2	2995.3550					
A2B0	2		3037.5450				
A2B1	2			3140.5300			
A3B0	2				3199.9050		
A3B1	2					3256.9750	
A1B1	2						3439.3900
Sig.		1.000	1.000	1.000	1.000	1.000	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 2,000.

ISOLEUSIN

Duncan[a]

TKxPERLAKUAN	N	Subset for alpha = 0.05					
		1	2	3	4	5	6
A1B0	2	2386.1100					
A3B0	2		2533.8450				
A2B0	2			2574.4700			
A2B1	2				2665.6250		
A3B1	2					2700.2500	
A1B1	2						2965.2600
Sig.		1.000	1.000	1.000	1.000	1.000	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 2,000.

LEUSIN

Duncan[a]

TKxPERLAKUAN	N	Subset for alpha = 0.05				
		1	2	3	4	5
A1B0	2	6998.8600				
A3B0	2		7186.5600			
A2B0	2			7491.8500		
A3B1	2				7974.2150	
A2B1	2				7978.8250	
A1B1	2					8571.3600
Sig.		1.000	1.000	1.000	.760	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 2,000.

LISIN

Duncan[a]

TKxPERLAKUAN	N	Subset for alpha = 0.05					
		1	2	3	4	5	6
A1B0	2	4350.6850					
A2B0	2		4537.8150				
A3B0	2			4851.9450			
A2B1	2				5096.2900		
A3B1	2					5197.5400	
A1B1	2						5424.4200
Sig.		1.000	1.000	1.000	1.000	1.000	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 2,000.

VALIN

Duncan[a]

TKxPERLAKUAN	N	Subset for alpha = 0.05					
		1	2	3	4	5	6
A1B0	2	3639.1850					
A3B0	2		3873.0300				
A2B0	2			3904.8400			
A2B1	2				4059.0100		
A3B1	2					4096.0750	
A1B1	2						4446.5100
Sig.		1.000	1.000	1.000	1.000	1.000	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 2,000.

FENILALANIN

Duncan[a]

TKxPERLAKUAN	N	Subset for alpha = 0.05				
		1	2	3	4	5
A1B0	2	4762.0450				
A3B0	2		4825.5350			
A2B0	2			5072.0400		
A3B1	2			5072.6600		
A2B1	2				5151.6350	
A1B1	2					5937.2950
Sig.		1.000	1.000	.961	1.000	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 2,000.

PROLIN

Duncan[a]

TKxPERLAKUAN	N	Subset for alpha = 0.05					
		1	2	3	4	5	6
A1B0	2	4753.6250					
A2B0	2		5040.9550				
A3B0	2			5093.5200			
A2B1	2				5391.2800		
A3B1	2					5486.5450	
A1B1	2						5777.2100
Sig.		1.000	1.000	1.000	1.000	1.000	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 2,000.

SERIN

Duncan[a]

TKxPERLAKUAN	N	Subset for alpha = 0.05			
		1	2	3	4
A3B0	2	5586.4250			
A1B0	2	5587.4250			
A2B1	2		5957.3200		
A2B0	2			6048.9050	
A3B1	2			6054.5950	
A1B1	2				6333.2650
Sig.		.936	1.000	.650	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 2,000.

TREONIN

Duncan[a]

TKxPERLAKUAN	N	Subset for alpha = 0.05					
		1	2	3	4	5	6
A1B0	2	3380.5950					
A2B0	2		3578.0450				
A3B0	2			3621.9850			
A2B1	2				3691.8500		
A3B1	2					3820.0100	
A1B1	2						4111.7450
Sig.		1.000	1.000	1.000	1.000	1.000	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 2,000.

TIROSIN

Duncan[a]

TKxPERLAKUAN	N	Subset for alpha = 0.05					
		1	2	3	4	5	6
A1B0	2	2677.9050					
A2B1	2		2710.7650				
A3B1	2			2786.2350			
A3B0	2				3136.3700		
A2B0	2					3367.9150	
A1B1	2						3425.0500
Sig.		1.000	1.000	1.000	1.000	1.000	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 2,000.

Lampiran E. Data Hasil *Cupping Test*

Gambar Lampiran E1. Hasil *Cupping Test* Kopi Ceri Asalan Tanpa Perkecambahan

LABORATORIUM PENGUJI
(Laboratory for Testing)
PUSAT PENELITIAN KOPI DAN KAKAO INDONESIA
(Indonesian Coffee and Cocoa Research Institute)
"LP PUSLITKOKA"

FR-LP. 5.10.01.02.01-C3

LAPORAN HASIL UJI CITARASA
(Report of Cup Testing)

No. 02.23.1.0242 - C 02.23.1.0242

Nomer Contoh (Sample Number) : 02.23.1.0242
Tanggal Penerimaan Contoh (Sample received) : 10-07-2023
Tanggal Pengujian (Date of testing) : 11-07-2023 — 12-07-2023
Jenis Contoh (Kind of sample) : Biji kopi/green beans Robusta OP
Identitas Contoh: : Kopi Robusta Non Germinasi 1 D, Natural Proses.

Karakteristik (Characteristic)	Skor Citarasa (Cup testing Score)*	Karakteristik (Characteristic)	Skor Citarasa (Cup testing Score)*
Fragrance/Aroma	7.50	Uniform Cups	10.00
Flavor	7.63	Balance	7.63
Aftertaste	7.38	Clean Cups	10.00
Salt/Acid	7.38	Overall	7.63
Bitter/Sweet	7.38	Taints-Faults	0.00
Mouthfeel/Body	7.75	Final Score**	80.25
Notes:	Chocolaty, Spicy-Clove Like, Nutty, Coconut Milk Aroma, Brown Fruit, Rubbery.		

* Keterangan skor: 6.00 - 6.75= Good; 7.00 - 7.75= Very good; 8.00 - 8.75= Excellent; 9.00 - 9.75= Outstanding
(Score notation)

** Final Score notation: Nilai minimum untuk (Minimum Value for) Specialty Grade = 80

Jember, 12-07-2023

Catatan (Notes):

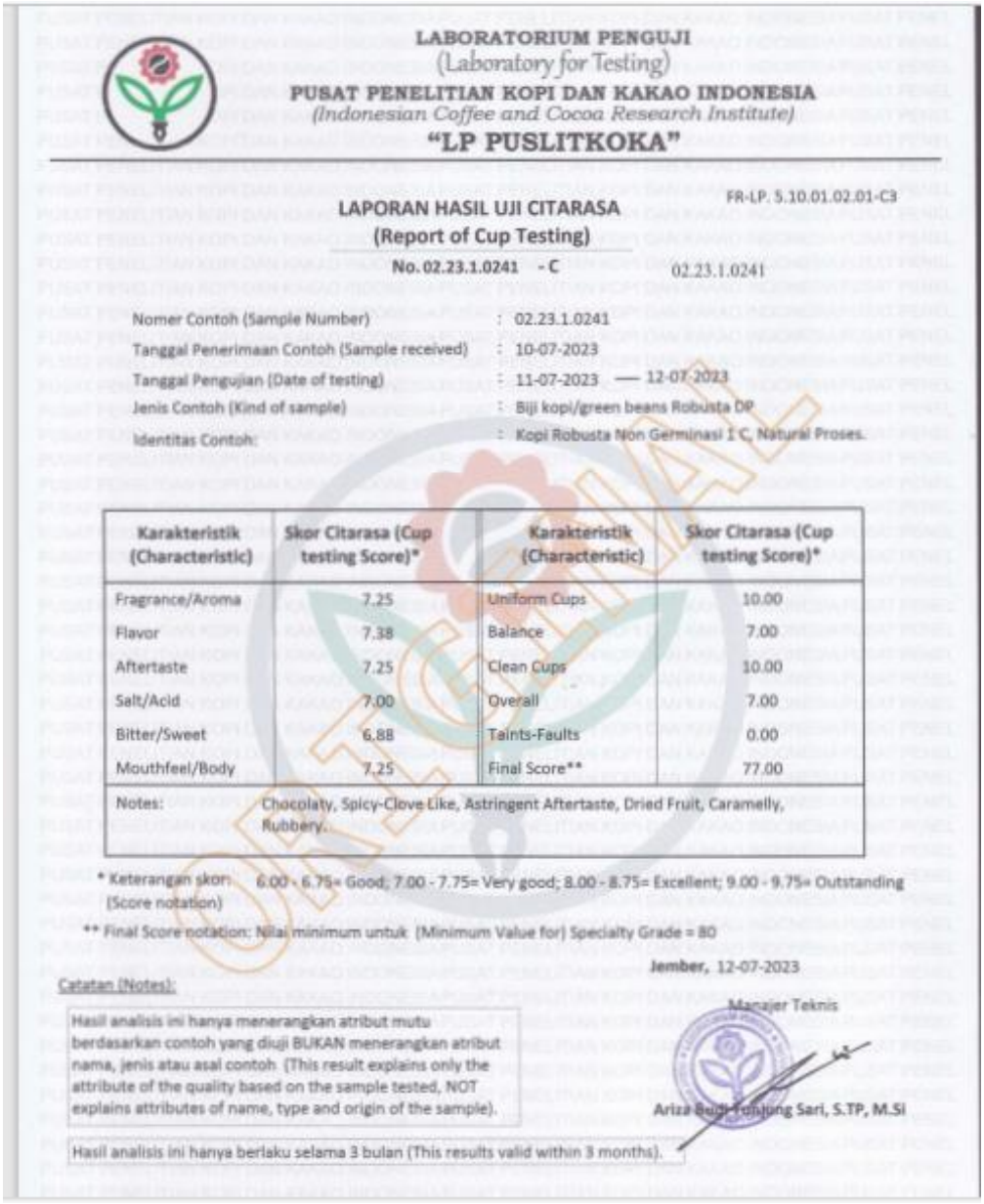
Hasil analisis ini hanya menerangkan atribut mutu berdasarkan contoh yang diuji BUKAN menerangkan atribut nama, jenis atau asal contoh (This result explains only the attribute of the quality based on the sample tested, NOT explains attributes of name, type and origin of the sample).

Manajer Teknis

Ariza Budi Tjahjani Sari, S.TP, M.Si

Hasil analisis ini hanya berlaku selama 3 bulan (This results valid within 3 months).

Gambar Lampiran E2. Hasil *Cupping Test* Kopi Ceri semi matang Tanpa Perkecambahan



LABORATORIUM PENGUJI
(Laboratory for Testing)
PUSAT PENELITIAN KOPI DAN KAKAO INDONESIA
(Indonesian Coffee and Cocoa Research Institute)
"LP PUSLITKOKA"

FR-LP. 5.10.01.02.01-C3

LAPORAN HASIL UJI CITARASA
(Report of Cup Testing)
No. 02.23.1.0241 - C

02.23.1.0241

Nomer Contoh (Sample Number) : 02.23.1.0241
Tanggal Penerimaan Contoh (Sample received) : 10-07-2023
Tanggal Pengujian (Date of testing) : 11-07-2023 — 12-07-2023
Jenis Contoh (Kind of sample) : Biji kopi/green beans Robusta DP
Identitas Contoh: : Kopi Robusta Non Germinasi 1 C, Natural Proses.

Karakteristik (Characteristic)	Skor Citarasa (Cup testing Score)*	Karakteristik (Characteristic)	Skor Citarasa (Cup testing Score)*
Fragrance/Aroma	7.25	Uniform Cups	10.00
Flavor	7.38	Balance	7.00
Aftertaste	7.25	Clean Cups	10.00
Salt/Acid	7.00	Overall	7.00
Bitter/Sweet	6.88	Taints-Faults	0.00
Mouthfeel/Body	7.25	Final Score**	77.00
Notes:	Chocolaty, Spicy-Clove Like, Astringent Aftertaste, Dried Fruit, Caramelly, Rubbery.		

* Keterangan skor: 6.00 - 6.75= Good; 7.00 - 7.75= Very good; 8.00 - 8.75= Excellent; 9.00 - 9.75= Outstanding (Score notation)

** Final Score notation: Nilai minimum untuk (Minimum Value for) Specialty Grade = 80

Jember, 12-07-2023

Manajer Teknis

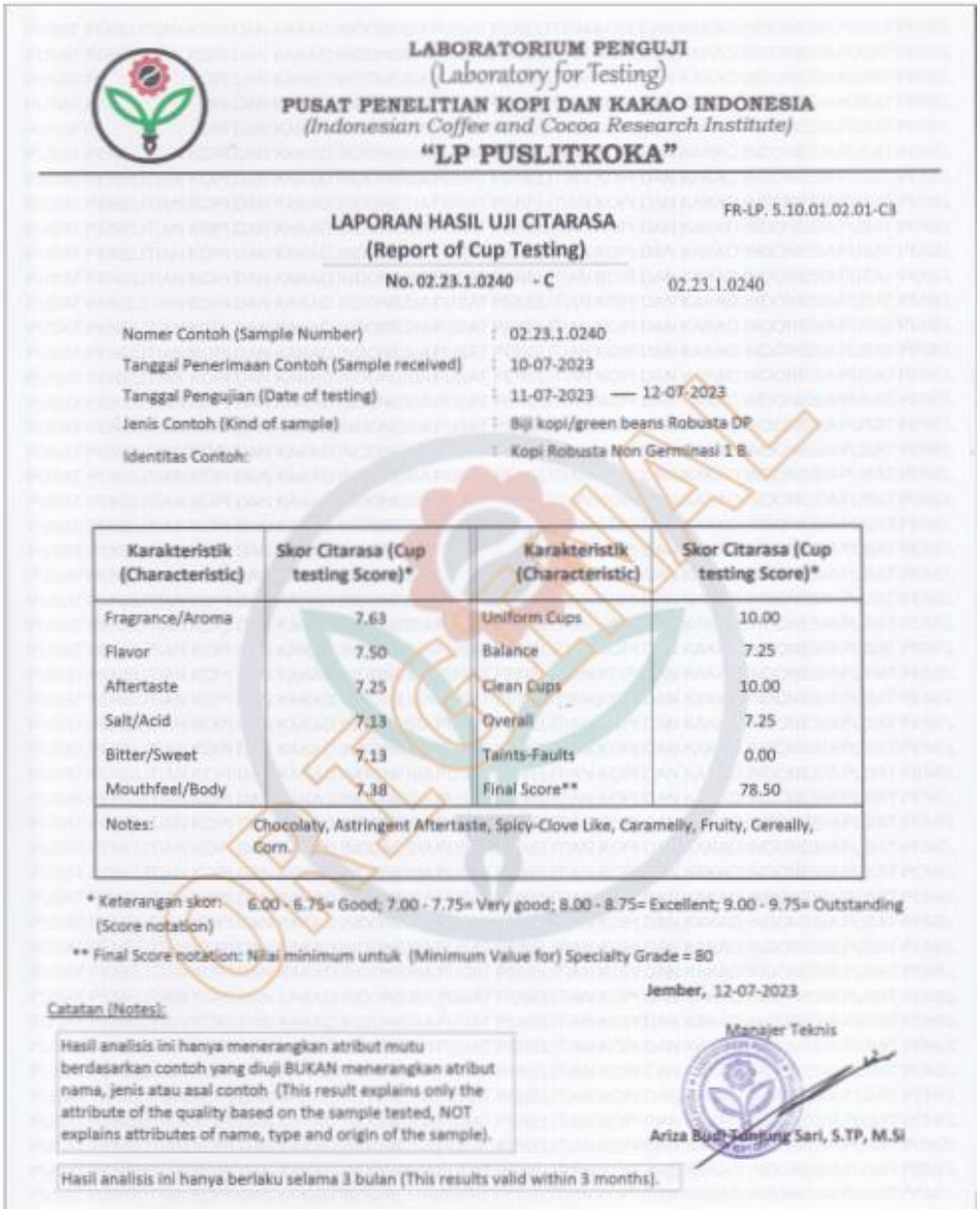
Ariza Budi Tjahjono Sari, S.TP, M.Si

Catatan (Notes):

Hasil analisis ini hanya menerangkan atribut mutu berdasarkan contoh yang diuji BUKAN menerangkan atribut nama, jenis atau asal contoh (This result explains only the attribute of the quality based on the sample tested, NOT explains attributes of name, type and origin of the sample).

Hasil analisis ini hanya berlaku selama 3 bulan (This results valid within 3 months).

Gambar Lampiran E3. Hasil *Cupping Test* Kopi Ceri matang Tanpa Perkecambahan



LABORATORIUM PENGUJI
(Laboratory for Testing)
PUSAT PENELITIAN KOPI DAN KAKAO INDONESIA
(Indonesian Coffee and Cocoa Research Institute)
"LP PUSLITKOKA"

FR-LP. 5.10.01.02.01-C3

LAPORAN HASIL UJI CITARASA
(Report of Cup Testing)

No. 02.23.1.0240 - C

02.23.1.0240

Nomer Contoh (Sample Number) : 02.23.1.0240
Tanggal Penerimaan Contoh (Sample received) : 10-07-2023
Tanggal Pengujian (Date of testing) : 11-07-2023 — 12-07-2023
Jenis Contoh (Kind of sample) : Biji kopi/green beans Robusta DP
Identitas Contoh: : Kopi Robusta Non Germinasi 1 B

Karakteristik (Characteristic)	Skor Citarasa (Cup testing Score)*	Karakteristik (Characteristic)	Skor Citarasa (Cup testing Score)*
Fragrance/Aroma	7.63	Uniform Cups	10.00
Flavor	7.50	Balance	7.25
Aftertaste	7.25	Clean Cups	10.00
Salt/Acid	7.13	Overall	7.25
Bitter/Sweet	7.13	Taints-Faults	0.00
Mouthfeel/Body	7.38	Final Score**	78.50
Notes:	Chocolaty, Astringent Aftertaste, Spicy-Clove Like, Caramelly, Fruity, Cereally, Corn		

* Keterangan skor: 6.00 - 6.75= Good; 7.00 - 7.75= Very good; 8.00 - 8.75= Excellent; 9.00 - 9.75= Outstanding
(Score notation)

** Final Score notation: Nilai minimum untuk (Minimum Value for) Specialty Grade = 80

Jember, 12-07-2023

Catatan (Notes):

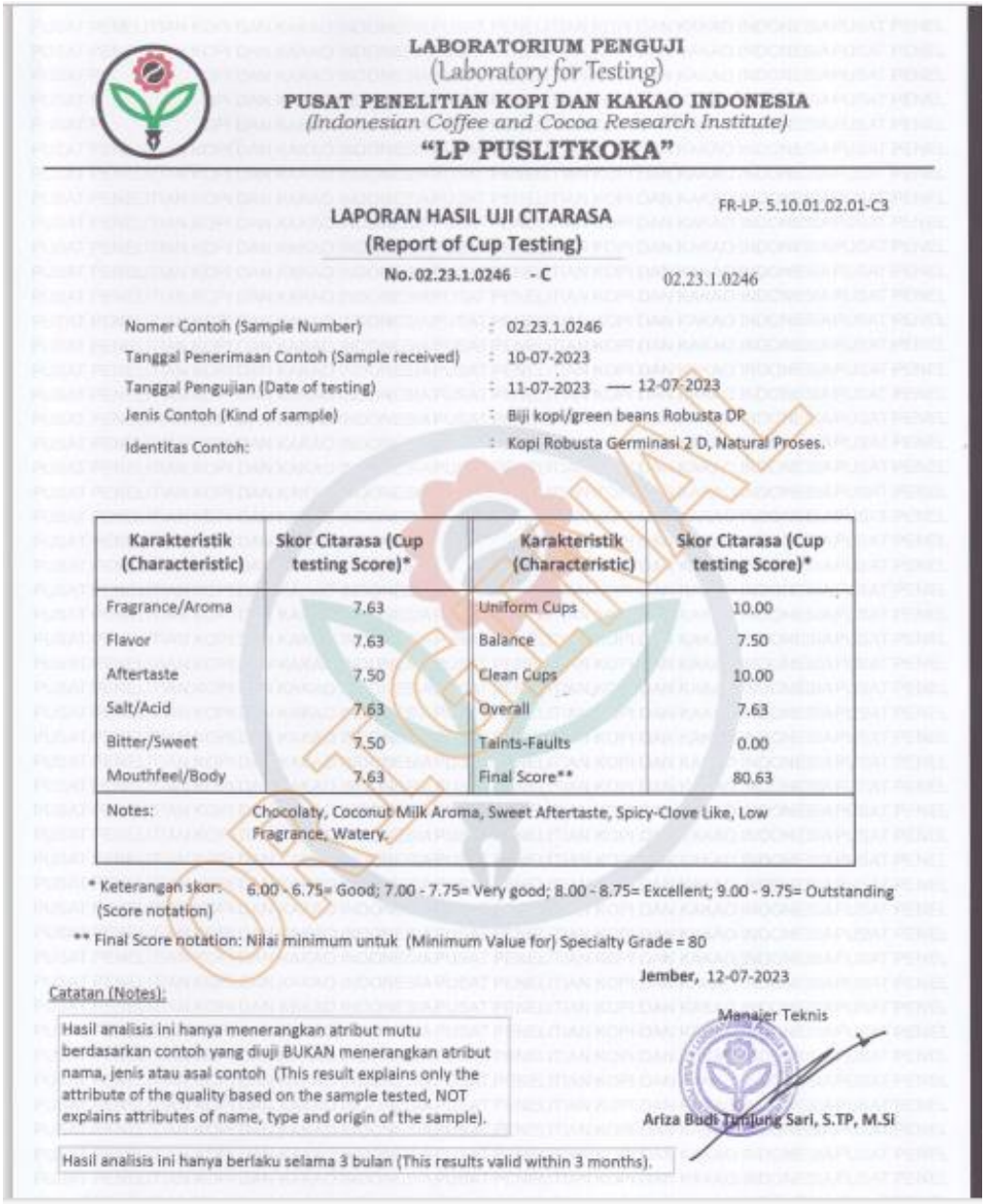
Hasil analisis ini hanya menerangkan atribut mutu berdasarkan contoh yang diuji BUKAN menerangkan atribut nama, jenis atau asal contoh (This result explains only the attribute of the quality based on the sample tested, NOT explains attributes of name, type and origin of the sample).

Manajer Teknis

Ariza Budi Tantung Sari, S.TP, M.Si

Hasil analisis ini hanya berlaku selama 3 bulan (This results valid within 3 months).

Gambar Lampiran E4. Hasil *Cupping Test* Kopi Ceri Asalan dengan Perkecambahan



LABORATORIUM PENGUJI
(Laboratory for Testing)
PUSAT PENELITIAN KOPI DAN KAKAO INDONESIA
(Indonesian Coffee and Cocoa Research Institute)
"LP PUSLITKOKA"

FR-LP. 5.10.01.02.01-C3

LAPORAN HASIL UJI CITARASA
(Report of Cup Testing)

No. 02.23.1.0246 - C 02.23.1.0246

Nomer Contoh (Sample Number) : 02.23.1.0246
Tanggal Penerimaan Contoh (Sample received) : 10-07-2023
Tanggal Pengujian (Date of testing) : 11-07-2023 — 12-07-2023
Jenis Contoh (Kind of sample) : Biji kopi/green beans Robusta DP
Identitas Contoh: : Kopi Robusta Germinasi 2 D, Natural Proses.

Karakteristik (Characteristic)	Skor Citarasa (Cup testing Score)*	Karakteristik (Characteristic)	Skor Citarasa (Cup testing Score)*
Fragrance/Aroma	7.63	Uniform Cups	10.00
Flavor	7.63	Balance	7.50
Aftertaste	7.50	Clean Cups	10.00
Salt/Acid	7.63	Overall	7.63
Bitter/Sweet	7.50	Taints-Faults	0.00
Mouthfeel/Body	7.63	Final Score**	80.63
Notes:	Chocolaty, Coconut Milk Aroma, Sweet Aftertaste, Spicy-Clove Like, Low Fragrance, Watery.		

* Keterangan skor: 6.00 - 6.75= Good; 7.00 - 7.75= Very good; 8.00 - 8.75= Excellent; 9.00 - 9.75= Outstanding (Score notation)

** Final Score notation: Nilai minimum untuk (Minimum Value for) Specialty Grade = 80

Jember, 12-07-2023

Catatan (Notes):

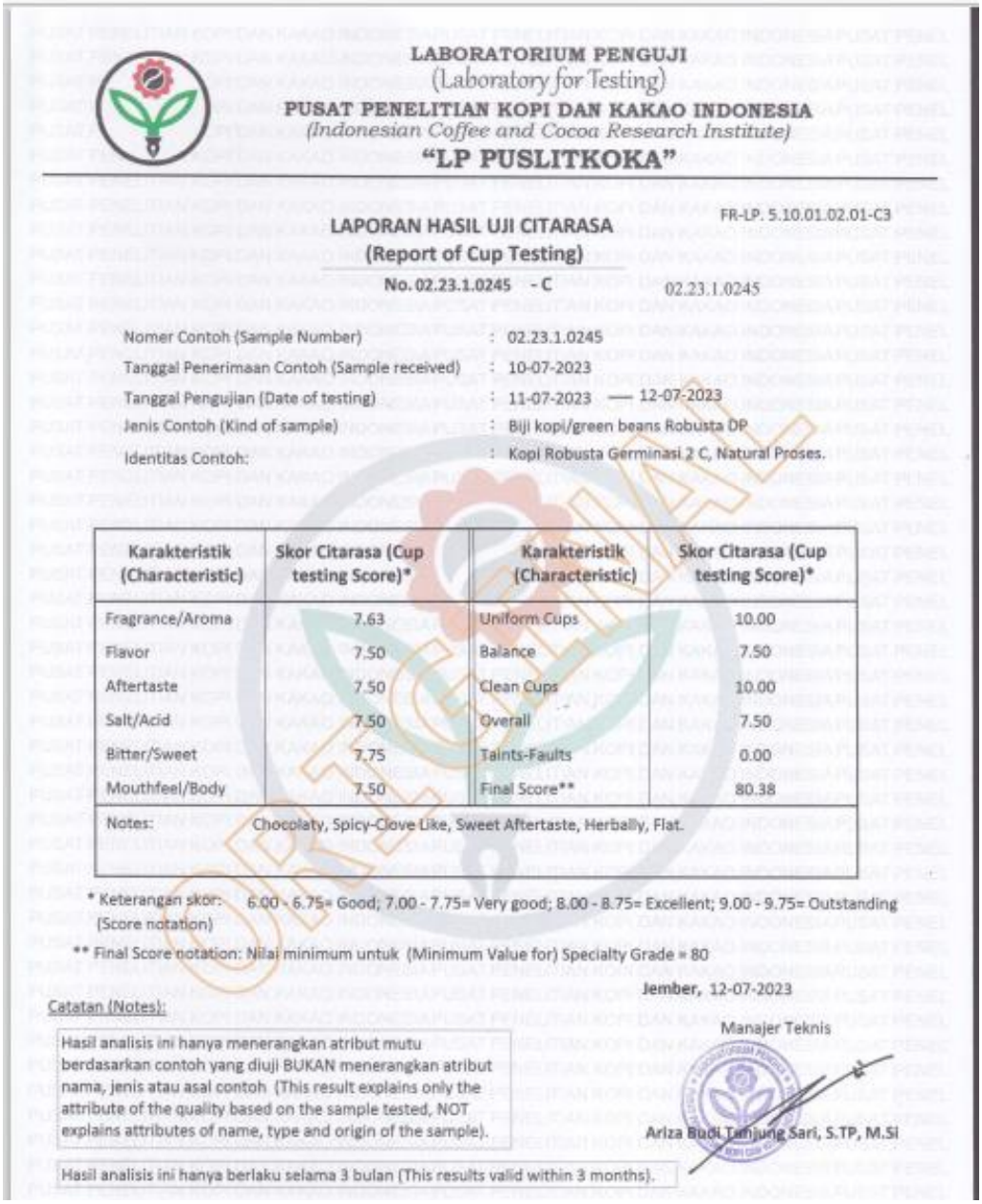
Hasil analisis ini hanya menerangkan atribut mutu berdasarkan contoh yang diuji BUKAN menerangkan atribut nama, jenis atau asal contoh (This result explains only the attribute of the quality based on the sample tested, NOT explains attributes of name, type and origin of the sample).

Manajer Teknis

Ariza Budi Tunjung Sari, S.TP, M.Si

Hasil analisis ini hanya berlaku selama 3 bulan (This results valid within 3 months).

Gambar Lampiran E5. Hasil *Cupping Test* Kopi Ceri semi matang dengan Perkecambahan



LABORATORIUM PENGUJI
(Laboratory for Testing)
PUSAT PENELITIAN KOPI DAN KAKAO INDONESIA
(Indonesian Coffee and Cocoa Research Institute)
"LP PUSLITKOKA"

FR-LP. 5.10.01.02.01-C3

LAPORAN HASIL UJI CITARASA
(Report of Cup Testing)

No. 02.23.1.0245 - C 02.23.1.0245

Nomer Contoh (Sample Number) : 02.23.1.0245
Tanggal Penerimaan Contoh (Sample received) : 10-07-2023
Tanggal Pengujian (Date of testing) : 11-07-2023 — 12-07-2023
Jenis Contoh (Kind of sample) : Biji kopi/green beans Robusta DP
Identitas Contoh: : Kopi Robusta Germinasi 2 C, Natural Proses.

Karakteristik (Characteristic)	Skor Citarasa (Cup testing Score)*	Karakteristik (Characteristic)	Skor Citarasa (Cup testing Score)*
Fragrance/Aroma	7.63	Uniform Cups	10.00
Flavor	7.50	Balance	7.50
Aftertaste	7.50	Clean Cups	10.00
Salt/Acid	7.50	Overall	7.50
Bitter/Sweet	7.75	Taints-Faults	0.00
Mouthfeel/Body	7.50	Final Score**	80.38
Notes:	Chocolaty, Spicy-Clove Like, Sweet Aftertaste, Herbally, Flat.		

* Keterangan skor: 6.00 - 6.75= Good; 7.00 - 7.75= Very good; 8.00 - 8.75= Excellent; 9.00 - 9.75= Outstanding
(Score notation)

** Final Score notation: Nilai minimum untuk (Minimum Value for) Specialty Grade = 80

Jember, 12-07-2023

Catatan (Notes):

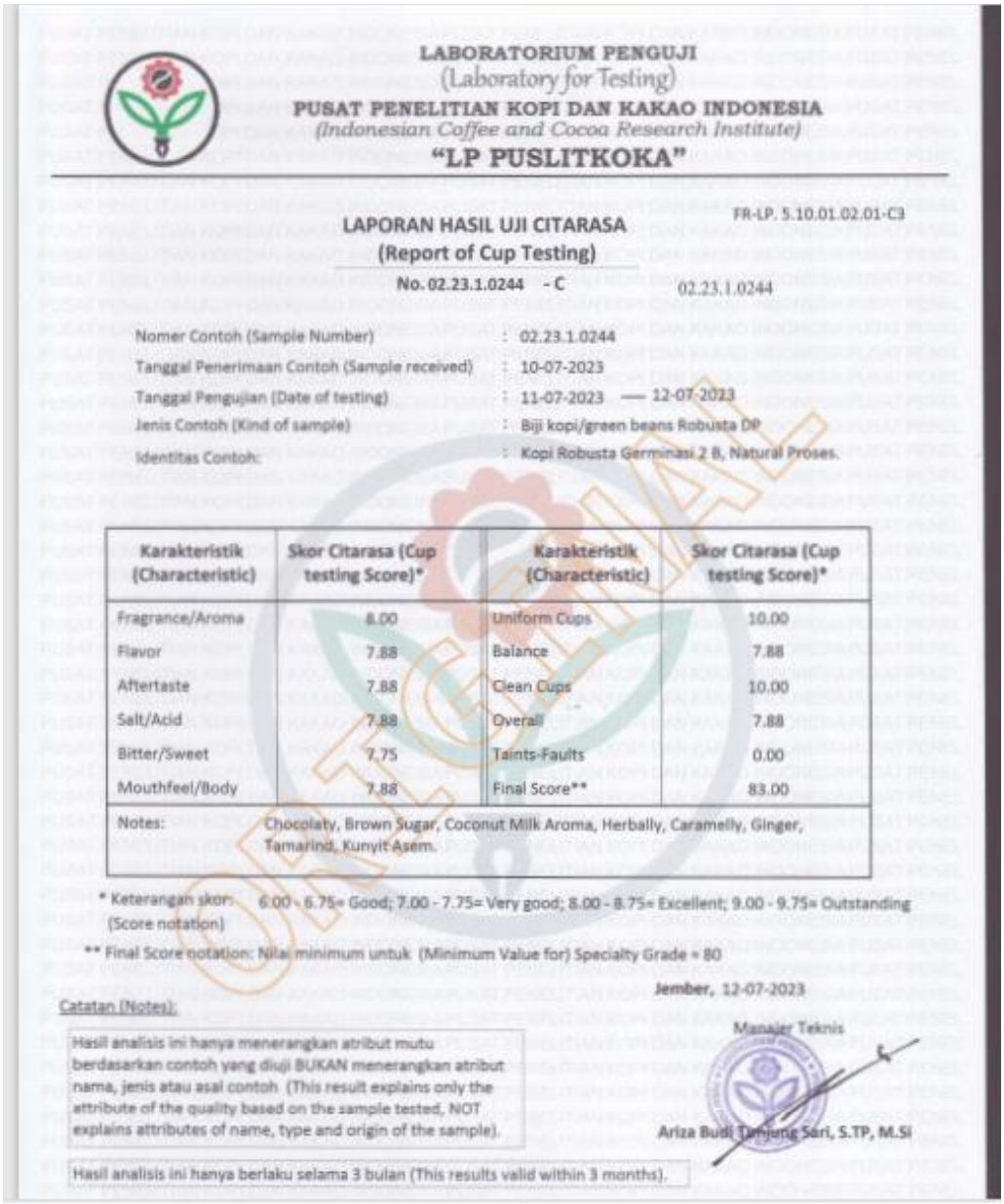
Hasil analisis ini hanya menerangkan atribut mutu berdasarkan contoh yang diuji BUKAN menerangkan atribut nama, jenis atau asal contoh (This result explains only the attribute of the quality based on the sample tested, NOT explains attributes of name, type and origin of the sample).

Manajer Teknis

Ariza Budi Tanjung Sari, S.TP, M.Si

Hasil analisis ini hanya berlaku selama 3 bulan (This results valid within 3 months).

Gambar Lampiran E6. Hasil *Cupping Test* Kopi Ceri matang dengan Perkecambahan



LABORATORIUM PENGUJI
(Laboratory for Testing)
PUSAT PENELITIAN KOPI DAN KAKAO INDONESIA
(Indonesian Coffee and Cocoa Research Institute)
"LP PUSLITKOKA"

FR-LP. 5.10.01.02.01-C3

LAPORAN HASIL UJI CITARASA
(Report of Cup Testing)

No. 02.23.1.0244 - C 02.23.1.0244

Nomer Contoh (Sample Number) : 02.23.1.0244
Tanggal Penerimaan Contoh (Sample received) : 10-07-2023
Tanggal Pengujian (Date of testing) : 11-07-2023 — 12-07-2023
Jenis Contoh (Kind of sample) : Biji kopi/green beans Robusta DP
Identitas Contoh: : Kopi Robusta Germinasi 2 B, Natural Proses.

Karakteristik (Characteristic)	Skor Citarasa (Cup testing Score)*	Karakteristik (Characteristic)	Skor Citarasa (Cup testing Score)*
Fragrance/Aroma	8.00	Uniform Cups	10.00
Flavor	7.88	Balance	7.88
Aftertaste	7.88	Clean Cups	10.00
Salt/Acid	7.88	Overall	7.88
Bitter/Sweet	7.75	Taints-Faults	0.00
Mouthfeel/Body	7.88	Final Score**	83.00
Notes:	Chocolaty, Brown Sugar, Coconut Milk Aroma, Herbally, Caramelly, Ginger, Tamarind, Kunyit Asem.		

* Keterangan skor: 6.00 - 6.75= Good; 7.00 - 7.75= Very good; 8.00 - 8.75= Excellent; 9.00 - 9.75= Outstanding (Score notation)

** Final Score notation: Nilai minimum untuk (Minimum Value for) Specialty Grade = 80

Jember, 12-07-2023

Catatan (Notes):

Hasil analisis ini hanya menerangkan atribut mutu berdasarkan contoh yang diuji BUKAN menerangkan atribut nama, jenis atau asal contoh (This result explains only the attribute of the quality based on the sample tested, NOT explains attributes of name, type and origin of the sample).

Manajer Teknis

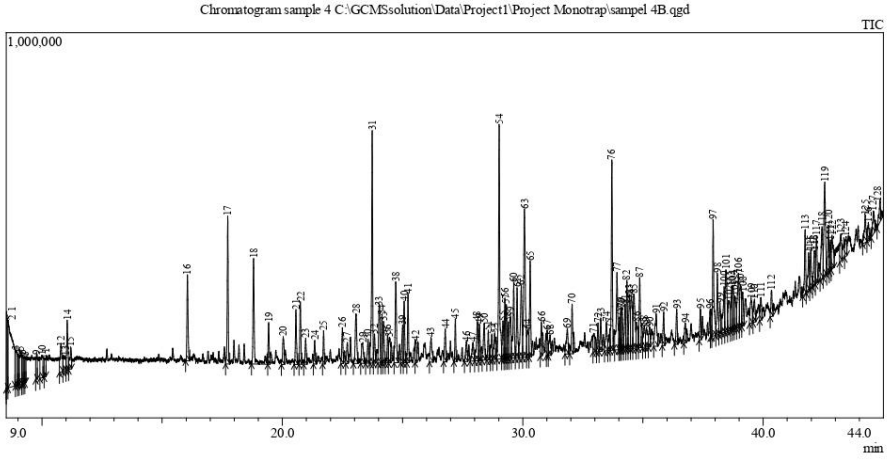
Ariza Budi Tanjung Sari, S.TP, M.Si

Hasil analisis ini hanya berlaku selama 3 bulan (This results valid within 3 months).

Lampiran F. Data Hasil GC-MS

Tabel Lampiran F1. Hasil GC-MS Kopi Ceri Asalan-Non Perkecambahan

KROMATOGRAM SAMPLE KOPI



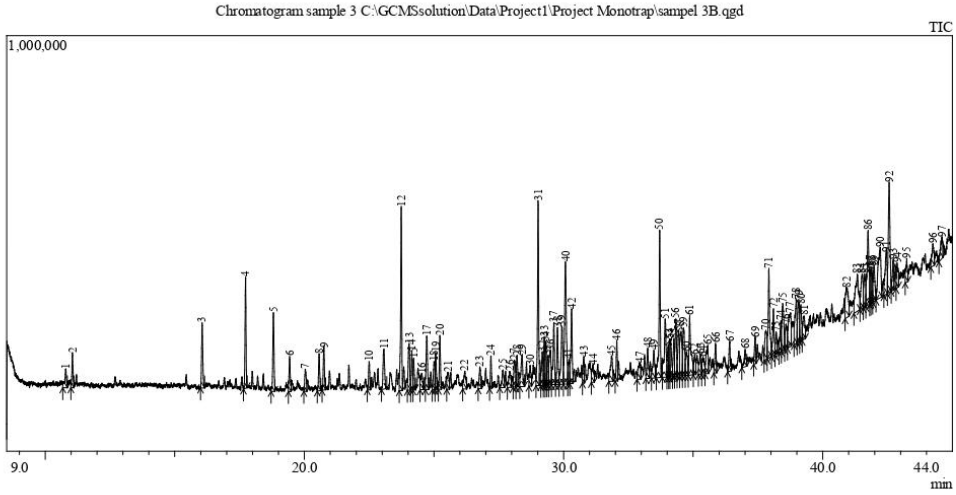
Peak Report TIC

Peak#	R.Time	Area	Area%	Height	Height%	Base m/z	Name
1	8.528	713263	1.173	199504	1.31	39.95	Methylene chloride
2	8.590	2305300	3.790	175770	1.16	39.95	
3	8.930	438513	0.721	90157	0.59	57.05	
4	9.020	298263	0.490	80460	0.53	31.95	
5	9.111	510891	0.840	84691	0.56	57.00	BUTANE, 1,1'-OXYBIS-
6	9.189	211290	0.347	73457	0.48	31.95	
7	9.261	277931	0.457	68293	0.45	31.95	
8	9.315	212341	0.349	65267	0.43	31.95	
9	9.775	258264	0.425	63787	0.42	280.95	
10	10.015	411080	0.676	57364	0.38	56.95	Nonane, 2,5-dimethyl-
11	10.145	221590	0.364	46785	0.31	31.95	
12	10.781	407598	0.670	66343	0.44	82.90	Chloroform
13	10.970	260124	0.428	38733	0.25	42.95	
14	11.052	433347	0.712	129466	0.85	43.00	OCTANE, 5-ETHYL-2-METHYL-
15	11.201	261704	0.430	56690	0.37	43.00	UNDECANE, 2,8-DIMETHYL-
16	16.051	737623	1.213	223212	1.47	79.00	Pyridine (CAS)
17	17.730	1103076	1.813	383608	2.52	71.05	Hexadecane
18	18.802	1054368	1.733	273568	1.80	94.00	Pyrazine, methyl- (CAS)
19	19.430	311514	0.512	108389	0.71	71.05	Dodecane, 4,6-dimethyl-
20	20.036	309167	0.508	72194	0.47	42.95	2-Propanone, 1-hydroxy-
21	20.566	448066	0.737	142010	0.93	108.00	Pyrazine, 2,5-dimethyl-
22	20.748	514242	0.845	162013	1.07	108.00	Pyrazine, 2,6-dimethyl- (CAS)
23	20.971	223630	0.368	67415	0.44	107.05	Pyrazine, ethyl-
24	21.346	202949	0.334	61380	0.40	108.10	Pyrazine, 2,3-dimethyl- (CAS)
25	21.717	236865	0.389	86198	0.57	57.05	Heneicosane
26	22.494	289661	0.476	93120	0.61	121.05	Pyrazine, 2-ethyl-6-methyl- (CAS)
27	22.703	200081	0.329	54498	0.36	121.05	Pyrazine, 2-ethyl-5-methyl-
28	23.060	592827	0.975	128241	0.84	42.00	Pyrazine, trimethyl-
29	23.343	284308	0.467	53938	0.35	57.00	Octadecane
30	23.563	212546	0.349	61809	0.41	57.05	Dodecane, 4,6-dimethyl-
31	23.736	1845802	3.034	603891	3.97	71.05	Dodecane, 4,6-dimethyl-
32	23.834	231453	0.380	74905	0.49	43.00	Nonadecane (CAS)
33	24.026	639247	1.051	146453	0.96	71.05	Hexadecane
34	24.144	360747	0.593	124782	0.82	57.05	Hexadecane
35	24.211	359223	0.591	107845	0.71	135.05	
36	24.375	252827	0.416	72811	0.48	57.05	Heneicosane
37	24.457	331151	0.544	65910	0.43	44.95	Acetic acid (CAS)
38	24.716	861342	1.416	210085	1.38	42.95	2-Propanone, 1-(acetyloxy)-
39	25.006	354255	0.582	97025	0.64	96.00	Octadecane, 1-iodo-
40	25.062	539195	0.886	158608	1.04	54.00	Pyrazine, tetramethyl- (CAS)
41	25.229	493635	0.811	178995	1.18	71.05	Hexadecane
42	25.552	207320	0.341	56417	0.37	85.00	
43	26.181	302189	0.497	64311	0.42	95.00	2-Furancarboxylic acid, 4-pentadecyl ester
44	26.777	309853	0.509	84863	0.56	81.00	2-Furanmethanol, acetate (CAS)

Peak#	R.Time	Area	Area%	Height	Height%	Base m/z	Name
45	27.196	300704	0.494	110200	0.72	57.00	Heneicosane
46	27.651	232403	0.382	51039	0.34	42.95	Undecane, 4-ethyl-
47	27.926	263859	0.434	48333	0.32	57.00	
48	28.105	499214	0.821	101452	0.67	110.00	2-Furancarboxaldehyde, 5-methyl-
49	28.196	323808	0.532	94618	0.62	57.00	Hexadecane
50	28.396	402668	0.662	96001	0.63	57.05	Heneicosane
51	28.565	232643	0.382	74760	0.49	57.00	Heneicosane
52	28.711	255123	0.419	66353	0.44	57.05	Dodecane, 2,7,10-trimethyl-
53	28.826	309037	0.508	67394	0.44	71.05	
54	29.017	2090679	3.437	608932	4.00	71.05	Eicosane
55	29.179	357257	0.587	98054	0.64	71.05	
56	29.254	457865	0.753	157171	1.03	71.05	Octadecane (CAS)
57	29.320	432700	0.711	139782	0.92	43.00	Octadecane (CAS)
58	29.399	272881	0.449	94493	0.62	71.05	
59	29.483	503567	0.828	105852	0.70	57.05	Eicosane
60	29.627	800686	1.316	195241	1.28	71.05	Hexadecane
61	29.762	629533	1.035	181756	1.20	57.05	Eicosane
62	29.936	885406	1.456	187330	1.23	42.00	Butyrolactone
63	30.069	1863129	3.063	384172	2.53	97.95	2-Furanmethanol
64	30.205	369311	0.607	71022	0.47	71.05	
65	30.307	829586	1.364	248399	1.63	71.05	Eicosane
66	30.776	276942	0.455	87741	0.58	57.00	Octadecane (CAS)
67	31.012	207576	0.341	64632	0.43	69.05	11-Methyldodecanol
68	31.138	275744	0.453	52100	0.34	57.00	
69	31.851	333726	0.549	66001	0.43	57.05	2-Methyltetracosane
70	32.051	468397	0.770	128433	0.84	57.00	Eicosane
71	32.954	229146	0.377	48020	0.32	71.05	
72	33.133	230712	0.379	73954	0.49	57.05	Heneicosane
73	33.241	310758	0.511	86524	0.57	57.05	Heneicosane
74	33.479	341575	0.562	74997	0.49	71.05	Eicosane
75	33.620	212771	0.350	56684	0.37	57.05	
76	33.706	1557298	2.560	494327	3.25	71.05	Eicosane
77	33.916	924252	1.519	200666	1.32	71.05	Eicosane
78	34.025	275273	0.453	83613	0.55	43.00	
79	34.083	297427	0.489	107541	0.71	57.05	
80	34.122	375160	0.617	106460	0.70	71.05	HEXATRIACONTANE
81	34.257	445970	0.733	116057	0.76	71.05	
82	34.327	565527	0.930	177787	1.17	57.00	Eicosane
83	34.441	596468	0.981	139552	0.92	57.05	Eicosane
84	34.512	613052	1.008	128433	0.84	133.00	Benzaldehyde, 2,5-dimethyl- (CAS)
85	34.629	794422	1.306	139870	0.92	57.05	Undecane, 3,8-dimethyl-
86	34.736	290426	0.477	67340	0.44	57.00	
87	34.861	701582	1.153	181932	1.20	71.05	Eicosane
88	35.055	278823	0.458	57476	0.38	71.10	
89	35.147	263652	0.433	50731	0.33	71.05	NONANE, 5-METHYL-5-PROPYL-
90	35.266	207953	0.342	51354	0.34	109.00	PHENOL, 2-METHOXY-
91	35.547	511172	0.840	83811	0.55	57.00	
92	35.864	300766	0.494	86788	0.57	71.05	Eicosane
93	36.401	291260	0.479	91091	0.60	57.05	Eicosane
94	36.756	212948	0.350	51405	0.34	57.05	TRICOSANE
95	37.383	275915	0.454	80749	0.53	57.05	Eicosane
96	37.809	232324	0.382	72241	0.48	109.00	
97	37.917	1152219	1.894	301942	1.99	71.05	Hexacosane, 1-iodo-
98	38.091	557256	0.916	159707	1.05	71.05	Eicosane
99	38.202	284809	0.468	79865	0.53	71.05	Pentadecane, 2,6,10,14-tetramethyl- (CAS)
100	38.375	522615	0.859	118059	0.78	71.05	Eicosane
101	38.451	839694	1.380	160484	1.06	71.05	Eicosane
102	38.569	432741	0.711	78886	0.52	71.05	
103	38.696	441103	0.725	111545	0.73	71.05	
104	38.743	428289	0.704	113340	0.75	85.10	Sulfurous acid, dodecyl hexyl ester
105	38.820	414221	0.681	85854	0.56	71.05	
106	38.968	643015	1.057	140549	0.92	71.05	Tetracosane (CAS)
107	39.050	555637	0.913	110494	0.73	137.00	
108	39.150	351991	0.579	88457	0.58	71.05	
109	39.495	355351	0.584	64602	0.42	85.05	
110	39.639	266654	0.438	59383	0.39	57.05	
111	39.896	233844	0.384	58096	0.38	57.00	Hexadecane, 1-iodo- (CAS)
112	40.348	234447	0.385	67463	0.44	57.05	
113	41.744	527102	0.867	166536	1.10	71.05	Dotriacontane (CAS)
114	41.889	440066	0.723	98343	0.65	71.05	5,5-Diethylpentadecane
115	41.976	382106	0.628	99559	0.65	71.05	Eicosane
116	42.130	437547	0.719	90483	0.60	57.05	Docosane (CAS)
117	42.216	444808	0.731	123941	0.82	71.05	Docosane (CAS)
118	42.445	627796	1.032	133762	0.88	71.10	Tetratriacontane (CAS)
119	42.559	1186862	1.951	243504	1.60	150.00	2-Methoxy-4-vinylphenol
120	42.707	419993	0.690	122925	0.81	71.05	Tetrapentacontane
121	42.798	291820	0.480	79251	0.52	57.00	Nonacosane (CAS)
122	42.864	434016	0.713	87936	0.58	71.05	Tetracontane
123	43.230	325186	0.535	70637	0.46	57.05	
124	43.441	229188	0.377	51465	0.34	71.05	
125	44.248	354167	0.582	70671	0.46	191.00	2,4-Di-tert-butylphenol
126	44.371	205679	0.338	47320	0.31	42.95	Sulfurous acid, hexyl tetradecyl ester
127	44.576	318895	0.524	60493	0.40	195.00	1,1'-Biphenyl, 2,2',5,5'-tetramethyl-
128	44.851	249499	0.410	53348	0.35	57.00	Decane, 5-ethyl-5-methyl-
		60830353	100.000	15204825	100.00		

Tabel Lampiran F2. Hasil GC-MS Kopi Ceri semi matang-Non Perkecambahan

KROMATOGRAM SAMPLE KOPI



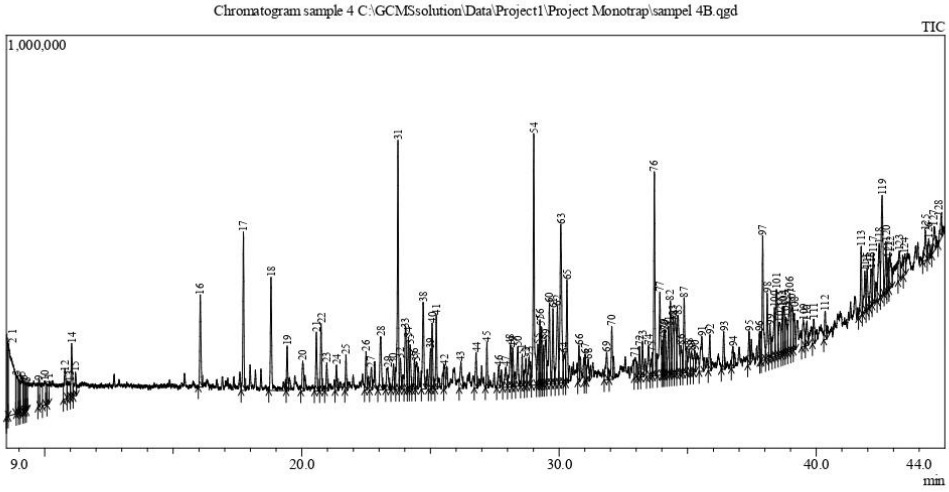
Peak Report TIC

Peak#	R.Time	Area	Area%	Height	Height%	Base m/z	Name
1	10.793	210027	0.510	45192	0.46	82.90	Chloroform
2	11.052	247952	0.602	84832	0.86	43.05	OCTANE, 5-ETHYL-2-METHYL-
3	16.056	530007	1.287	156958	1.59	79.00	Pyridine (CAS)
4	17.732	739118	1.795	267304	2.70	71.05	Hexadecane
5	18.804	633521	1.539	189364	1.91	94.00	Pyrazine, methyl- (CAS)
6	19.430	249299	0.606	84390	0.85	71.05	Dodecane, 4,6-dimethyl-
7	20.038	227559	0.553	53068	0.54	43.00	2-Propanone, 1-hydroxy-
8	20.569	282698	0.687	89015	0.90	108.05	Pyrazine, 2,5-dimethyl-
9	20.747	338906	0.823	101926	1.03	108.05	Pyrazine, 2,6-dimethyl- (CAS)
10	22.496	219374	0.533	67623	0.68	121.05	Pyrazine, 2-ethyl-6-methyl- (CAS)
11	23.067	420494	1.021	95595	0.97	42.00	1,1'-(Ethanediylidenediamino)bis(5-amino-1H-tetrazole)
12	23.736	1341845	3.259	443335	4.48	71.05	Dodecane, 4,6-dimethyl-
13	24.040	461577	1.121	111948	1.13	57.05	Hexadecane
14	24.141	278141	0.676	94016	0.95	57.05	Hexadecane
15	24.213	235118	0.571	75867	0.77	135.05	Octane, 1-bromo-
16	24.521	204102	0.496	38473	0.39	71.05	
17	24.721	490860	1.192	128039	1.29	43.00	2-Propanone, 1-(acetyloxy)- (CAS)
18	25.002	257921	0.627	66921	0.68	96.00	
19	25.061	274084	0.666	89052	0.90	136.10	Pyrazine, tetramethyl-
20	25.227	370533	0.900	129644	1.31	71.05	Hexadecane
21	25.525	200149	0.486	40987	0.41	71.10	Heneicosane
22	26.188	229197	0.557	42569	0.43	95.00	Octane, 2,4,6-trimethyl-
23	26.772	218031	0.530	52362	0.53	81.05	2-Furanmethanol, acetate (CAS)
24	27.196	209695	0.509	78025	0.79	57.05	Eicosane, 1-iodo-
25	27.659	220400	0.535	42714	0.43	57.00	Octadecane (CAS)
26	27.917	220295	0.535	38630	0.39	57.05	Octadecane
27	28.105	307486	0.747	64779	0.65	110.05	2-Furancarboxaldehyde, 5-methyl-
28	28.198	263036	0.639	74802	0.76	57.05	Hexadecane
29	28.391	390467	0.948	75497	0.76	57.00	Octadecane (CAS)
30	28.710	200497	0.487	49816	0.50	57.05	OCTADECANE
31	29.016	1357009	3.296	445097	4.50	71.05	Eicosane
32	29.180	301455	0.732	80906	0.82	71.10	
33	29.255	328269	0.797	116454	1.18	71.10	Pentadecane, 2,6,10,14-tetramethyl- (CAS)
34	29.317	318226	0.773	102780	1.04	71.10	
35	29.399	228616	0.555	70775	0.72	71.05	
36	29.480	406272	0.987	82486	0.83	71.05	Octadecane (CAS)
37	29.628	606806	1.474	149669	1.51	71.05	Hexadecane
38	29.763	482337	1.172	136696	1.38	57.05	Eicosane
39	29.931	702737	1.707	139465	1.41	42.00	2(3H)-Furanone, dihydro- (CAS)
40	30.074	1424960	3.461	294000	2.97	98.00	2-Furanmethanol
41	30.207	239288	0.581	58013	0.59	42.95	
42	30.308	686729	1.668	179440	1.81	71.05	Dodecane, 2,6,11-trimethyl-
43	30.782	215411	0.523	62921	0.64	57.00	Heptadecane
44	31.125	217878	0.529	41279	0.42	43.00	Tetradecane (CAS)

Peak#	R.Time	Area	Area%	Height	Height%	Base m/z	Name
45	31.846	352731	0.857	60050	0.61	57.00	1-Octadecanesulphonyl chloride
46	32.051	303793	0.738	97411	0.98	57.05	Eicosane
47	32.951	257631	0.626	39039	0.39	31.95	Undecane, 3,8-dimethyl-
48	33.246	285980	0.695	72884	0.74	57.05	Octadecane (CAS)
49	33.481	327023	0.794	66873	0.68	57.05	Docosane (CAS)
50	33.707	1272929	3.092	354885	3.59	71.05	Eicosane
51	33.916	712151	1.730	139135	1.41	71.10	Docosane (CAS)
52	34.028	256975	0.624	71618	0.72	43.00	
53	34.084	225195	0.547	90855	0.92	71.00	
54	34.129	351221	0.853	90839	0.92	71.10	
55	34.257	318265	0.773	90184	0.91	71.10	Docosane (CAS)
56	34.331	497792	1.209	137712	1.39	71.10	Docosane (CAS)
57	34.440	469871	1.141	110053	1.11	57.00	2,6,10-Trimethyltridecane
58	34.522	554192	1.346	104191	1.05	133.00	Benzaldehyde, 2,5-dimethyl- (CAS)
59	34.629	585505	1.422	113991	1.15	57.00	
60	34.740	290055	0.705	54965	0.56	43.05	
61	34.865	743033	1.805	143239	1.45	71.05	Eicosane
62	35.056	218927	0.532	47114	0.48	71.10	Carbonic acid, octadecyl vinyl ester
63	35.273	236611	0.575	48925	0.49	109.00	PHENOL, 2-METHOXY-
64	35.374	229003	0.556	40526	0.41	57.05	
65	35.561	368857	0.896	68056	0.69	71.05	
66	35.860	254526	0.618	71137	0.72	57.05	Triacontane, 1-iodo-
67	36.401	253034	0.615	71705	0.72	57.00	Eicosane
68	37.001	203127	0.493	41299	0.42	57.05	
69	37.386	223311	0.542	62163	0.63	57.05	Eicosane
70	37.804	368773	0.896	69773	0.70	93.95	Ethanone, 1-(1H-pyrrol-2-yl)- (CAS)
71	37.919	911484	2.214	215114	2.17	71.10	Tetratetracontane
72	38.093	445169	1.081	112029	1.13	71.05	Tetracosane
73	38.200	204183	0.496	53401	0.54	71.05	Pentadecane, 2,6,10,14-tetramethyl- (CAS)
74	38.380	266330	0.647	74190	0.75	42.95	Tetracosane (CAS)
75	38.456	598384	1.454	113541	1.15	57.05	Eicosane
76	38.571	303539	0.737	58122	0.59	57.00	
77	38.740	585071	1.421	80022	0.81	57.05	
78	38.970	520769	1.265	107320	1.08	71.05	Docosane (CAS)
79	39.073	472218	1.147	100289	1.01	137.05	Phenol, 4-ethyl-2-methoxy- (CAS)
80	39.154	395145	0.960	87467	0.88	57.05	Tetracosane
81	39.275	321498	0.781	56578	0.57	57.00	
82	40.931	547618	1.330	71503	0.72	71.10	
83	41.326	762519	1.852	89283	0.90	441.15	
84	41.515	461824	1.122	83047	0.84	71.05	Triacontane, 1-iodo-
85	41.612	368696	0.896	79651	0.80	57.00	
86	41.744	874368	2.124	179873	1.82	71.05	Tetracosane
87	41.815	226616	0.550	89416	0.90	71.05	
88	41.886	304746	0.740	86145	0.87	71.05	2-Methyltriacontane
89	41.976	409396	0.994	85422	0.86	71.05	Octadecane (CAS)
90	42.212	930424	2.260	120622	1.22	57.05	
91	42.445	538332	1.308	101256	1.02	71.05	Tetratriacontane (CAS)
92	42.561	1224659	2.975	265847	2.69	150.00	2-Methoxy-4-vinylphenol
93	42.714	269272	0.654	73755	0.75	71.05	Pentadecane, 8-hexyl-
94	42.869	255376	0.620	59852	0.60	71.10	
95	43.239	222455	0.540	56545	0.57	71.05	
96	44.252	294819	0.716	53592	0.54	191.10	Phenol, 2,6-bis(1,1-dimethylethyl)-
97	44.590	303545	0.737	52623	0.53	195.10	
		41167348	100.000	9897851	100.00		

Tabel Lampiran F3. Hasil GC-MS Kopi Ceri Asalan-Non Perkecambahan

KROMATOGRAM SAMPLE KOPI



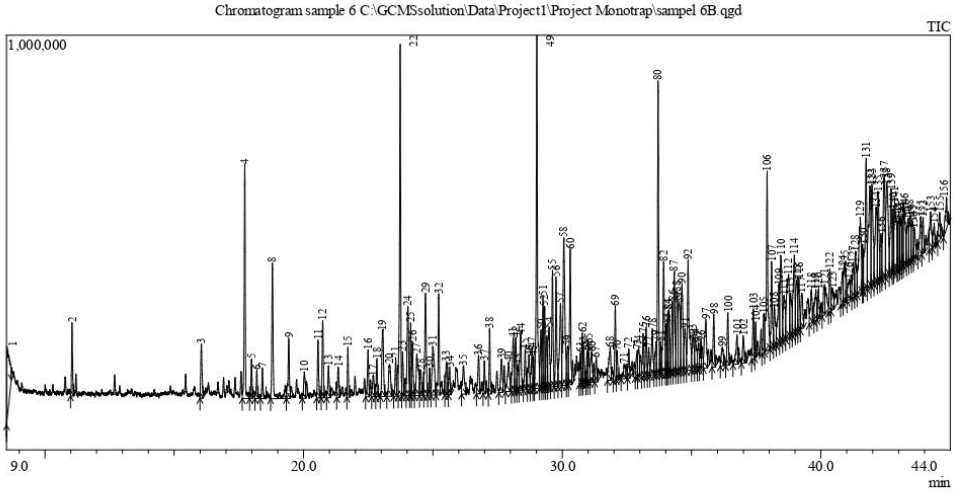
Peak Report TIC

Peak#	R.Time	Area	Area%	Height	Height%	Base m/z	Name
1	8.528	713263	1.173	199504	1.31	39.95	Methylene chloride
2	8.590	2305300	3.790	175770	1.16	39.95	
3	8.930	438513	0.721	90157	0.59	57.05	
4	9.020	298263	0.490	80460	0.53	31.95	
5	9.111	510891	0.840	84691	0.56	57.00	BUTANE, 1,1'-OXYBIS-
6	9.189	211290	0.347	73457	0.48	31.95	
7	9.261	277931	0.457	68293	0.45	31.95	
8	9.315	212341	0.349	65267	0.43	31.95	
9	9.775	258264	0.425	63787	0.42	280.95	
10	10.015	411080	0.676	57364	0.38	56.95	Nonane, 2,5-dimethyl-
11	10.145	221590	0.364	46785	0.31	31.95	
12	10.781	407598	0.670	66343	0.44	82.90	Chloroform
13	10.970	260124	0.428	38733	0.25	42.95	
14	11.052	433347	0.712	129466	0.85	43.00	OCTANE, 5-ETHYL-2-METHYL-
15	11.201	261704	0.430	56690	0.37	43.00	UNDECANE, 2,8-DIMETHYL-
16	16.051	737623	1.213	223212	1.47	79.00	Pyridine (CAS)
17	17.730	1103076	1.813	383608	2.52	71.05	Hexadecane
18	18.802	1054368	1.733	273568	1.80	94.00	Pyrazine, methyl- (CAS)
19	19.430	311514	0.512	108389	0.71	71.05	Dodecane, 4,6-dimethyl-
20	20.036	309167	0.508	72194	0.47	42.95	2-Propanone, 1-hydroxy-
21	20.566	448066	0.737	142010	0.93	108.00	Pyrazine, 2,5-dimethyl-
22	20.748	514242	0.845	162013	1.07	108.00	Pyrazine, 2,6-dimethyl- (CAS)
23	20.971	223630	0.368	67415	0.44	107.05	Pyrazine, ethyl-
24	21.346	202949	0.334	61380	0.40	108.10	Pyrazine, 2,3-dimethyl- (CAS)
25	21.717	236865	0.389	86198	0.57	57.05	Heneicosane
26	22.494	289661	0.476	93120	0.61	121.05	Pyrazine, 2-ethyl-6-methyl- (CAS)
27	22.703	200081	0.329	54498	0.36	121.05	Pyrazine, 2-ethyl-5-methyl-
28	23.060	592827	0.975	128241	0.84	42.00	Pyrazine, trimethyl-
29	23.343	284308	0.467	53938	0.35	57.00	Octadecane
30	23.563	212546	0.349	61809	0.41	57.05	Dodecane, 4,6-dimethyl-
31	23.736	1845802	3.034	603891	3.97	71.05	Dodecane, 4,6-dimethyl-
32	23.834	231453	0.380	74905	0.49	43.00	Nonadecane (CAS)
33	24.026	639247	1.051	146453	0.96	71.05	Hexadecane
34	24.144	360747	0.593	124782	0.82	57.05	Hexadecane
35	24.211	359223	0.591	107845	0.71	135.05	
36	24.375	252827	0.416	72811	0.48	57.05	Heneicosane
37	24.457	331151	0.544	65910	0.43	44.95	Acetic acid (CAS)
38	24.716	861342	1.416	210085	1.38	42.95	2-Propanone, 1-(acetyloxy)-
39	25.006	354255	0.582	97025	0.64	96.00	Octadecane, 1-iodo-
40	25.062	539195	0.886	158608	1.04	54.00	Pyrazine, tetramethyl- (CAS)
41	25.229	493635	0.811	178995	1.18	71.05	Hexadecane
42	25.552	207320	0.341	56417	0.37	85.00	
43	26.181	302189	0.497	64311	0.42	95.00	2-Furancarboxylic acid, 4-pentadecyl ester
44	26.777	309853	0.509	84863	0.56	81.00	2-Furanmethanol, acetate (CAS)

Peak#	R.Time	Area	Area%	Height	Height%	Base m/z	Name
45	27.196	300704	0.494	110200	0.72	57.00	Heneicosane
46	27.651	232403	0.382	51039	0.34	42.95	Undecane, 4-ethyl-
47	27.926	263859	0.434	48333	0.32	57.00	
48	28.105	499214	0.821	101452	0.67	110.00	2-Furancarboxaldehyde, 5-methyl-
49	28.196	323808	0.532	94618	0.62	57.00	Hexadecane
50	28.396	402668	0.662	96001	0.63	57.05	Heneicosane
51	28.565	232643	0.382	74760	0.49	57.00	Heneicosane
52	28.711	255123	0.419	66353	0.44	57.05	Dodecane, 2,7,10-trimethyl-
53	28.826	309037	0.508	67394	0.44	71.05	
54	29.017	2090679	3.437	608932	4.00	71.05	Eicosane
55	29.179	357257	0.587	98054	0.64	71.05	
56	29.254	457865	0.753	157171	1.03	71.05	Octadecane (CAS)
57	29.320	432700	0.711	139782	0.92	43.00	Octadecane (CAS)
58	29.399	272881	0.449	94493	0.62	71.05	
59	29.483	503567	0.828	105852	0.70	57.05	Eicosane
60	29.627	800686	1.316	195241	1.28	71.05	Hexadecane
61	29.762	629533	1.035	181756	1.20	57.05	Eicosane
62	29.936	885406	1.456	187330	1.23	42.00	Butyrolactone
63	30.069	1863129	3.063	384172	2.53	97.95	2-Furanmethanol
64	30.205	369311	0.607	71022	0.47	71.05	
65	30.307	829586	1.364	248399	1.63	71.05	Eicosane
66	30.776	276942	0.455	87741	0.58	57.00	Octadecane (CAS)
67	31.012	207576	0.341	64632	0.43	69.05	11-Methyldodecanol
68	31.138	275744	0.453	52100	0.34	57.00	
69	31.851	333726	0.549	66001	0.43	57.05	2-Methyltetracosane
70	32.051	468397	0.770	128433	0.84	57.00	Eicosane
71	32.954	229146	0.377	48020	0.32	71.05	
72	33.133	230712	0.379	73954	0.49	57.05	Heneicosane
73	33.241	310758	0.511	86524	0.57	57.05	Heneicosane
74	33.479	341575	0.562	74997	0.49	71.05	Eicosane
75	33.620	212771	0.350	56684	0.37	57.05	
76	33.706	1557298	2.560	494327	3.25	71.05	Eicosane
77	33.916	924252	1.519	200666	1.32	71.05	Eicosane
78	34.025	275273	0.453	83613	0.55	43.00	
79	34.083	297427	0.489	107541	0.71	57.05	
80	34.122	375160	0.617	106460	0.70	71.05	HEXATRIACONTANE
81	34.257	445970	0.733	116057	0.76	71.05	
82	34.327	565527	0.930	177787	1.17	57.00	Eicosane
83	34.441	596468	0.981	139552	0.92	57.05	Eicosane
84	34.512	613052	1.008	128433	0.84	133.00	Benzaldehyde, 2,5-dimethyl- (CAS)
85	34.629	794422	1.306	139870	0.92	57.05	Undecane, 3,8-dimethyl-
86	34.736	290426	0.477	67340	0.44	57.00	
87	34.861	701582	1.153	181932	1.20	71.05	Eicosane
88	35.055	278823	0.458	57476	0.38	71.10	
89	35.147	263652	0.433	50731	0.33	71.05	NONANE, 5-METHYL-5-PROPYL-
90	35.266	207953	0.342	51354	0.34	109.00	PHENOL, 2-METHOXY-
91	35.547	511172	0.840	83811	0.55	57.00	
92	35.864	300766	0.494	86788	0.57	71.05	Eicosane
93	36.401	291260	0.479	91091	0.60	57.05	Eicosane
94	36.756	212948	0.350	51405	0.34	57.05	TRICOSANE
95	37.383	275915	0.454	80749	0.53	57.05	Eicosane
96	37.809	232324	0.382	72241	0.48	109.00	
97	37.917	1152219	1.894	301942	1.99	71.05	Hexacosane, 1-iodo-
98	38.091	557256	0.916	159707	1.05	71.05	Eicosane
99	38.202	284809	0.468	79865	0.53	71.05	Pentadecane, 2,6,10,14-tetramethyl- (CAS)
100	38.375	522615	0.859	118059	0.78	71.05	Eicosane
101	38.451	839694	1.380	160484	1.06	71.05	Eicosane
102	38.569	432741	0.711	78886	0.52	71.05	
103	38.696	441103	0.725	111545	0.73	71.05	
104	38.743	428289	0.704	113340	0.75	85.10	Sulfurous acid, dodecyl hexyl ester
105	38.820	414221	0.681	85854	0.56	71.05	
106	38.968	643015	1.057	140549	0.92	71.05	Tetracosane (CAS)
107	39.050	555637	0.913	110494	0.73	137.00	
108	39.150	351991	0.579	88457	0.58	71.05	
109	39.495	355351	0.584	64602	0.42	85.05	
110	39.639	266654	0.438	59383	0.39	57.05	
111	39.896	233844	0.384	58096	0.38	57.00	Hexadecane, 1-iodo- (CAS)
112	40.348	234447	0.385	67463	0.44	57.05	
113	41.744	527102	0.867	166536	1.10	71.05	Dotriacontane (CAS)
114	41.889	440066	0.723	98343	0.65	71.05	5,5-Diethylpentadecane
115	41.976	382106	0.628	99559	0.65	71.05	Eicosane
116	42.130	437547	0.719	90483	0.60	57.05	Docosane (CAS)
117	42.216	444808	0.731	123941	0.82	71.05	Docosane (CAS)
118	42.445	627796	1.032	133762	0.88	71.10	Tetratriacontane (CAS)
119	42.559	1186862	1.951	243504	1.60	150.00	2-Methoxy-4-vinylphenol
120	42.707	419993	0.690	122925	0.81	71.05	Tetrapentacontane
121	42.798	291820	0.480	79251	0.52	57.00	Nonacosane (CAS)
122	42.864	434016	0.713	87936	0.58	71.05	Tetracontane
123	43.230	325186	0.535	70637	0.46	57.05	
124	43.441	229188	0.377	51465	0.34	71.05	
125	44.248	354167	0.582	70671	0.46	191.00	2,4-Di-tert-butylphenol
126	44.371	205679	0.338	47320	0.31	42.95	Sulfurous acid, hexyl tetradecyl ester
127	44.576	318895	0.524	60493	0.40	195.00	1,1'-Biphenyl, 2,2',5,5'-tetramethyl-
128	44.851	249499	0.410	53348	0.35	57.00	Decane, 5-ethyl-5-methyl-
		60830353	100.000	15204825	100.00		

Tabel Lampiran F4. Hasil GC-MS Kopi Ceri matang-Perkecambahan

KROMATOGRAM SAMPLE KOPI



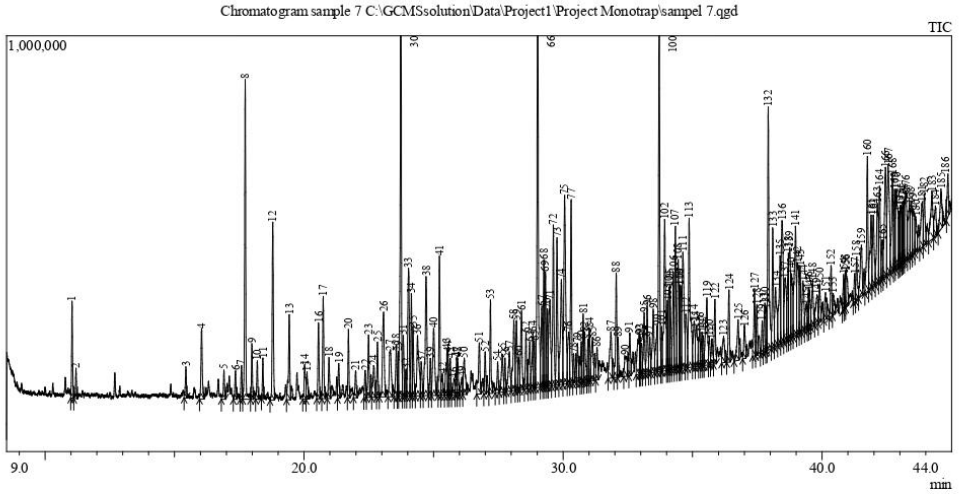
Peak Report TIC

Peak#	R.Time	Area	Area%	Height	Height%	Base m/z	Name
1	8.527	1197302	1.316	181906	0.81	39.90	Methylene chloride
2	11.052	439683	0.483	176674	0.79	43.05	Octane, 5-ethyl-2-methyl-
3	16.048	480324	0.528	130957	0.58	79.00	Pyridine (CAS)
4	17.728	1693180	1.860	564396	2.51	71.05	Hexadecane
5	17.989	283348	0.311	95454	0.42	71.00	Nonane, 5-butyl-
6	18.195	210220	0.231	68221	0.30	71.05	Octadecane (CAS)
7	18.408	235789	0.259	73772	0.33	71.00	Dodecane, 4,6-dimethyl-
8	18.791	1223717	1.345	326583	1.45	94.00	Pyrazine, methyl- (CAS)
9	19.426	502955	0.553	145166	0.65	71.05	Dodecane, 4,6-dimethyl-
10	20.029	284563	0.313	62775	0.28	43.00	2-Propanone, 1-hydroxy-
11	20.556	455774	0.501	139986	0.62	108.00	Pyrazine, 2,5-dimethyl-
12	20.741	603456	0.663	186949	0.83	108.00	Pyrazine, 2,6-dimethyl- (CAS)
13	20.965	286665	0.315	77232	0.34	107.05	Pyrazine, ethyl-
14	21.339	274122	0.301	73432	0.33	67.00	Pyrazine, 2,3-dimethyl- (CAS)
15	21.714	319069	0.351	120298	0.53	57.05	Heneicosane
16	22.491	377635	0.415	113168	0.50	121.00	Pyrazine, 2-ethyl-6-methyl-
17	22.687	209712	0.230	49909	0.22	121.05	Pyrazine, 2-ethyl-6-methyl-
18	22.835	258484	0.284	91426	0.41	57.05	Hexadecane
19	23.056	753680	0.828	157996	0.70	42.00	Pyrazine, trimethyl- (CAS)
20	23.325	422317	0.464	76694	0.34	57.05	Heptadecane
21	23.564	279523	0.307	92589	0.41	57.00	Dodecane, 4,6-dimethyl-
22	23.735	2599019	2.856	848188	3.77	71.05	Dodecane, 4,6-dimethyl-
23	23.830	298043	0.327	106332	0.47	43.00	Nonadecane (CAS)
24	24.036	900273	0.989	215422	0.96	57.00	Hexadecane
25	24.141	487914	0.536	175470	0.78	57.05	Hexadecane
26	24.208	445435	0.489	130562	0.58	135.05	
27	24.377	648821	0.713	100069	0.44	57.05	Heneicosane
28	24.516	244444	0.269	61441	0.27	71.05	
29	24.713	993981	1.092	246009	1.09	43.00	2-Propanone, 1-(acetyloxy)-
30	24.868	220453	0.242	65090	0.29	57.05	Hexadecane
31	24.996	700179	0.769	116435	0.52	71.05	
32	25.225	735319	0.808	243973	1.08	71.05	Hexadecane
33	25.519	253722	0.279	79210	0.35	71.00	
34	25.645	223628	0.246	66923	0.30	71.05	Dodecane, 2,6,11-trimethyl-
35	26.183	344624	0.379	68423	0.30	94.95	Tetratetracontane (CAS)
36	26.767	377229	0.414	91802	0.41	81.00	2-Furanmethanol, acetate (CAS)
37	26.986	238399	0.262	79220	0.35	57.00	Hexadecane
38	27.190	459815	0.505	158874	0.71	57.05	Heneicosane
39	27.652	378077	0.415	79966	0.36	43.00	Undecane, 4-ethyl-
40	27.925	429600	0.472	71101	0.32	57.00	Octadecane (CAS)
41	28.101	561681	0.617	128502	0.57	110.00	2-Furancarboxaldehyde, 5-methyl-
42	28.199	491815	0.540	127917	0.57	57.00	Hexadecane
43	28.276	255753	0.281	62043	0.28	57.00	
44	28.386	596914	0.656	134339	0.60	57.00	Eicosane

Peak#	R.Time	Area	Area%	Height	Height%	Base m/z	Name
45	28.564	344303	0.378	96743	0.43	57.00	Heneicosane
46	28.707	340917	0.375	79633	0.35	57.05	Pentadecane, 2,6,10,14-tetramethyl-
47	28.826	396520	0.436	98816	0.44	71.05	Pentadecane, 2,6,10,14-tetramethyl- (CAS)
48	28.887	228148	0.251	78156	0.35	57.05	
49	29.015	2946329	3.237	889842	3.96	71.05	Eicosane
50	29.179	501083	0.551	140443	0.62	71.05	2,6,10-Trimethyltridecane
51	29.253	662019	0.727	221409	0.98	71.05	Octadecane (CAS)
52	29.320	585518	0.643	196312	0.87	71.05	Pentadecane, 2,6,10,14-tetramethyl- (CAS)
53	29.396	395098	0.434	123988	0.55	71.00	
54	29.488	693031	0.761	142958	0.64	57.00	Eicosane
55	29.625	1062340	1.167	280222	1.25	71.05	Eicosane
56	29.760	935737	1.028	263872	1.17	57.00	Eicosane
57	29.932	1010894	1.111	197671	0.88	42.00	2(3H)-Furanone, dihydro- (CAS)
58	30.066	1879145	2.065	355696	1.58	98.00	2-Furanmethanol
59	30.209	415305	0.456	93967	0.42	71.05	Nonane, 5-methyl-5-propyl-
60	30.309	1183380	1.300	326818	1.45	71.05	Eicosane
61	30.701	241239	0.265	73940	0.33	43.00	
62	30.778	379337	0.417	121110	0.54	57.00	Hexadecane
63	30.828	232497	0.255	85313	0.38	71.05	Pentadecane, 2,6,10,14-tetramethyl- (CAS)
64	30.962	213614	0.235	76054	0.34	71.05	3-Ethyl-2,6,10-trimethylundecane
65	31.009	327403	0.360	93401	0.42	69.05	GERMACRANE-D
66	31.125	367565	0.404	72850	0.32	57.00	Eicosane
67	31.310	203776	0.224	58211	0.26	43.00	Undecane, 4,8-dimethyl-
68	31.853	433757	0.477	78652	0.35	57.00	
69	32.047	553860	0.609	176970	0.79	57.05	Octane, 2-methyl-
70	32.106	228625	0.251	68388	0.30	57.00	
71	32.395	206216	0.227	34981	0.16	57.00	
72	32.569	238286	0.262	70039	0.31	57.00	Hexadecane, 2,6,10,14-tetramethyl-
73	32.901	230726	0.254	63977	0.28	31.95	
74	32.954	286338	0.315	73182	0.33	57.00	Sulfurous acid, 2-ethylhexyl pentadecyl ester
75	33.127	350439	0.385	102429	0.46	57.00	Heneicosane
76	33.241	419733	0.461	116649	0.52	57.05	Heneicosane
77	33.349	234789	0.258	67315	0.30	43.00	Tetradecane, 4-methyl-
78	33.481	526616	0.579	110952	0.49	57.00	Eicosane
79	33.620	321008	0.353	78756	0.35	57.05	
80	33.705	2156119	2.369	707138	3.14	71.05	Octadecane (CAS)
81	33.800	230117	0.253	77879	0.35	57.00	
82	33.919	1156587	1.271	270157	1.20	71.05	Eicosane
83	34.026	352414	0.387	118967	0.53	71.05	
84	34.083	433648	0.476	150715	0.67	85.10	Decane, 1-iodo-
85	34.124	551993	0.607	152086	0.68	43.00	
86	34.257	591648	0.650	171535	0.76	71.05	
87	34.332	877066	0.964	242464	1.08	71.00	Eicosane
88	34.440	770731	0.847	192343	0.86	57.00	Eicosane
89	34.510	866209	0.952	163464	0.73	133.00	
90	34.629	1066929	1.172	210261	0.93	57.00	Eicosane
91	34.745	471860	0.518	101490	0.45	57.00	
92	34.863	1326032	1.457	266161	1.18	71.05	Docosane (CAS)
93	35.054	423710	0.466	82923	0.37	71.05	Decane, 1-iodo-
94	35.142	360489	0.396	72123	0.32	71.05	Nonane, 5-methyl-5-propyl-
95	35.255	234783	0.258	63169	0.28	108.95	
96	35.351	216162	0.238	65276	0.29	71.05	Hexadecane, 2,6,10,14-tetramethyl- (CAS)
97	35.550	639394	0.703	117243	0.52	57.00	Eicosane
98	35.858	454919	0.500	126956	0.56	71.05	Octadecane (CAS)
99	36.189	237636	0.261	44630	0.20	57.00	
100	36.402	423041	0.465	126323	0.56	57.00	Triacontane, 1-iodo-
101	36.757	339355	0.373	70103	0.31	57.00	Heptadecane, 2-methyl-
102	36.996	276744	0.304	66462	0.30	57.00	Eicosane
103	37.386	417575	0.459	119977	0.53	71.05	Eicosane
104	37.475	219178	0.241	85749	0.38	57.05	Tetracosane (CAS)
105	37.805	395169	0.434	94069	0.42	94.00	Ethanone, 1-(1H-pyrrol-2-yl)- (CAS)
106	37.919	1759526	1.933	431980	1.92	71.05	Tetratetracontane
107	38.090	774929	0.851	207835	0.92	71.05	Tetracosane (CAS)
108	38.191	440712	0.484	90041	0.40	71.05	Pentadecane, 2,6,10,14-tetramethyl- (CAS)
109	38.369	655881	0.721	139827	0.62	85.05	Tetracosane
110	38.447	1062237	1.167	208458	0.93	71.05	Hexacosane, 1-iodo-
111	38.567	603591	0.663	107434	0.48	146.00	
112	38.742	1081769	1.189	149108	0.66	57.00	
113	38.821	507558	0.558	101608	0.45	57.00	
114	38.970	864740	0.950	189255	0.84	71.05	Tetracosane (CAS)
115	39.068	624657	0.686	123873	0.55	137.00	
116	39.148	489078	0.537	125672	0.56	57.00	Tetracosane (CAS)
117	39.252	426121	0.468	86382	0.38	71.05	
118	39.633	364796	0.401	80326	0.36	71.05	11-Methyltricosane
119	39.806	352889	0.388	73574	0.33	71.05	
120	39.903	275361	0.303	70907	0.32	57.05	
121	40.132	293421	0.322	72831	0.32	57.00	Eicosane, 1-iodo-
122	40.343	348717	0.383	101922	0.45	71.05	Docosane (CAS)
123	40.434	279822	0.307	53936	0.24	71.05	Heptadecane, 8-methyl-
124	40.832	308904	0.339	77169	0.34	71.05	Tetracosane, 2,6,10,15,19,23-hexamethyl- (CAS)
125	40.910	475170	0.522	87006	0.39	71.05	
126	41.095	276916	0.304	49193	0.22	57.05	
127	41.255	373462	0.410	83227	0.37	71.05	
128	41.327	458200	0.503	106756	0.47	57.00	Dotriacontane
129	41.516	1197012	1.315	181559	0.81	71.05	Triacontane, 1-iodo-
130	41.610	242013	0.266	113066	0.50	57.00	

Tabel Lampiran F5. Hasil GC-MS Kopi Ceri semi matang-Perkecambahan

KROMATOGRAM SAMPLE KOPI



Peak Report TIC

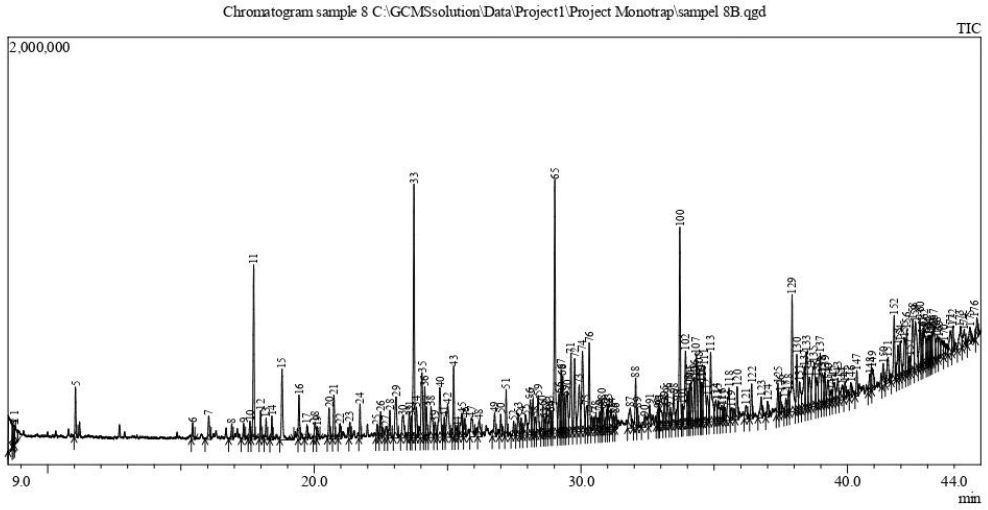
Peak#	R.Time	Area	Area%	Height	Height%	Base m/z	Name
1	11.045	577364	0.477	233209	0.74	43.00	OCTANE, 5-ETHYL-2-METHYL-
2	11.195	204943	0.169	72922	0.23	43.00	Octane, 5-ethyl-2-methyl-
3	15.440	218372	0.180	74735	0.24	57.00	Tetradecane
4	16.044	628422	0.519	169622	0.54	79.00	Pyridine (CAS)
5	16.906	231834	0.191	69703	0.22	57.00	Tetradecane
6	17.353	205737	0.170	67995	0.22	71.05	Dodecane, 4,6-dimethyl-
7	17.584	235960	0.195	80961	0.26	71.00	Dodecane, 4,6-dimethyl-
8	17.729	2285555	1.888	769024	2.43	71.05	Hexadecane
9	17.986	359459	0.297	133473	0.42	71.05	Octadecane (CAS)
10	18.195	275104	0.227	92224	0.29	71.05	Dodecane, 4,6-dimethyl-
11	18.410	241403	0.199	96919	0.31	71.05	NONANE, 5-(2-METHYLPROPYL)-
12	18.791	1430015	1.181	427897	1.35	94.00	Pyrazine, methyl- (CAS)
13	19.428	692913	0.572	204352	0.65	71.05	Dodecane, 4,6-dimethyl-
14	20.020	330001	0.273	80913	0.26	43.00	OCTANE, 4-METHYL-
15	20.119	210456	0.174	65748	0.21	69.05	4-Nonanol, 2,6,8-trimethyl-
16	20.559	577051	0.477	182701	0.58	42.00	Pyrazine, 2,5-dimethyl-
17	20.739	785300	0.649	246268	0.78	108.05	Pyrazine, 2,6-dimethyl- (CAS)
18	20.962	331797	0.274	98565	0.31	107.00	Pyrazine, ethyl-
19	21.339	272213	0.225	83358	0.26	108.00	Pyrazine, 2,3-dimethyl- (CAS)
20	21.715	443508	0.366	164811	0.52	57.00	Heneicosane
21	21.990	231728	0.191	64536	0.20	57.05	Hexadecane
22	22.363	228264	0.189	64795	0.20	71.05	Tetradecane, 5-methyl-
23	22.487	532595	0.440	149959	0.47	121.05	Pyrazine, 2-ethyl-6-methyl-
24	22.687	331625	0.274	75621	0.24	121.00	Pyrazine, 2-ethyl-5-methyl- (CAS)
25	22.833	373974	0.309	132129	0.42	57.00	Hexadecane
26	23.071	1003513	0.829	203754	0.64	57.05	Heptadecane
27	23.315	619850	0.512	109576	0.35	57.00	Heneicosane
28	23.563	442418	0.365	124222	0.39	57.05	Dodecane, 4,6-dimethyl-
29	23.638	248842	0.206	108030	0.34	71.05	Eicosane, 1-iodo-
30	23.738	3723919	3.076	1205525	3.81	71.05	Dodecane, 4,6-dimethyl-
31	23.833	438847	0.362	146290	0.46	43.00	2,4-Dimethyldodecane
32	23.935	242379	0.200	65517	0.21	57.05	
33	24.035	1278682	1.056	307471	0.97	71.05	Hexadecane
34	24.141	756984	0.625	246604	0.78	57.00	Hexadecane
35	24.208	541772	0.447	167031	0.53	71.05	Tetradecane, 1-bromo- (CAS)
36	24.383	848006	0.700	145095	0.46	71.05	Heptadecane
37	24.525	286464	0.237	81970	0.26	71.05	
38	24.711	1395956	1.153	286589	0.91	43.00	2-Propanone, 1-(acetyloxy)-
39	24.878	310069	0.256	89497	0.28	57.00	Hexadecane
40	25.006	830175	0.686	161369	0.51	71.05	Pentadecane, 2,6,10,14-tetramethyl- (CAS)
41	25.228	959781	0.793	333984	1.06	71.05	Hexadecane
42	25.330	224035	0.185	52151	0.16	56.95	
43	25.520	426540	0.352	109988	0.35	57.05	Tetradecane, 2-methyl- (CAS)
44	25.540	316780	0.262	103303	0.33	43.00	2,4-Dimethyldodecane

Peak#	R.Time	Area	Area%	Height	Height%	Base m/z	Name
45	25.645	282633	0.233	87573	0.28	57.00	2,6,10-Trimethyltridecane
46	25.781	201552	0.166	38484	0.12	42.95	
47	25.890	292676	0.242	88839	0.28	71.05	NONANE, 5-METHYL-5-PROPYL-
48	25.925	226772	0.187	88870	0.28	69.05	CYCLOHEXANE, 1-ETHYL-2-PROPYL-
49	26.093	201050	0.166	41898	0.13	71.05	
50	26.180	433428	0.358	87618	0.28	94.95	Tetratetracontane (CAS)
51	26.765	553872	0.457	122844	0.39	81.00	2-Furanmethanol, acetate (CAS)
52	26.992	325244	0.269	100726	0.32	57.05	Pentadecane, 2-methyl- (CAS)
53	27.195	650267	0.537	225210	0.71	57.05	Heneicosane
54	27.475	261893	0.216	73896	0.23	57.05	Hexadecane
55	27.651	438761	0.362	90652	0.29	57.00	Heneicosane
56	27.759	251265	0.208	80854	0.26	57.05	Heneicosane
57	27.925	508199	0.420	94860	0.30	57.00	Octadecane (CAS)
58	28.097	836004	0.690	169221	0.54	110.00	2-Furancarboxaldehyde, 5-methyl-
59	28.200	653191	0.539	167544	0.53	57.05	Hexadecane
60	28.276	281562	0.233	80010	0.25	43.00	
61	28.395	770913	0.637	189317	0.60	57.05	Eicosane
62	28.566	439567	0.363	134657	0.43	57.00	Heneicosane
63	28.713	434839	0.359	111805	0.35	57.05	Pentadecane, 2,6,10-trimethyl-
64	28.830	522357	0.431	135249	0.43	71.05	
65	28.893	358723	0.296	112152	0.35	57.00	
66	29.019	4143368	3.422	1184781	3.75	71.05	Eicosane
67	29.180	716800	0.592	193414	0.61	71.05	
68	29.256	924944	0.764	305016	0.96	71.05	Eicosane
69	29.320	810948	0.670	275472	0.87	71.05	
70	29.400	511944	0.423	186034	0.59	71.05	
71	29.489	1070815	0.884	204788	0.65	57.00	Eicosane
72	29.625	1444140	1.193	385968	1.22	71.05	Eicosane
73	29.764	1263579	1.044	354304	1.12	57.05	Eicosane
74	29.933	1320400	1.091	252111	0.80	42.00	Undecane, 2-methyl- (CAS)
75	30.061	2338759	1.932	453922	1.44	98.00	2-Furanmethanol (CAS)
76	30.212	653255	0.540	123791	0.39	71.05	
77	30.313	1422102	1.175	441477	1.40	71.05	2,6,10-Trimethyltridecane
78	30.403	223136	0.184	70379	0.22	71.05	
79	30.560	278127	0.230	94007	0.30	71.05	Eicosane
80	30.704	312345	0.258	97282	0.31	71.05	
81	30.776	499388	0.412	163312	0.52	57.00	Octadecane (CAS)
82	30.829	424395	0.351	118921	0.38	71.00	Octadecane (CAS)
83	30.966	312482	0.258	101158	0.32	71.05	2,6,10-Trimethyltridecane
84	31.016	408619	0.337	127120	0.40	69.05	11-Methyldodecanol
85	31.134	553491	0.457	104203	0.33	57.00	
86	31.302	311187	0.257	77698	0.25	43.00	2-Acetyl-3-methylpyrazine
87	31.845	624286	0.516	111874	0.35	57.05	
88	32.050	860342	0.711	251129	0.79	57.00	Eicosane
89	32.117	276162	0.228	96056	0.30	57.00	Heptadecane, 2-methyl- (CAS)
90	32.385	307115	0.254	50097	0.16	57.00	
91	32.571	358863	0.296	102644	0.32	57.00	Heneicosane
92	32.932	524666	0.433	93779	0.30	43.00	
93	32.965	228183	0.188	96057	0.30	71.05	Tetracosane, 2,6,10,15,19,23-hexamethyl- (CAS)
94	33.030	276802	0.229	73361	0.23	57.00	
95	33.132	484653	0.400	146819	0.46	57.05	Eicosane
96	33.244	602313	0.497	162293	0.51	57.00	Heneicosane
97	33.352	311219	0.257	87035	0.28	71.05	Tetradecane, 4-methyl-
98	33.480	709843	0.586	152489	0.48	57.00	Docosane (CAS)
99	33.630	470617	0.389	110805	0.35	57.00	
100	33.709	3052874	2.522	997198	3.15	71.05	Eicosane
101	33.801	308508	0.255	108345	0.34	57.00	
102	33.922	1762148	1.455	364507	1.15	71.05	Docosane (CAS)
103	34.027	593469	0.490	167276	0.53	57.00	
104	34.090	550099	0.454	200356	0.63	85.05	Octadecane (CAS)
105	34.128	674551	0.557	205068	0.65	71.05	
106	34.260	810629	0.670	234014	0.74	71.05	
107	34.334	1188588	0.982	344156	1.09	71.05	Eicosane
108	34.444	1022613	0.845	263379	0.83	57.00	Eicosane
109	34.499	234023	0.193	200910	0.64	81.00	
110	34.514	764862	0.632	201451	0.64	85.05	
111	34.624	1509324	1.247	279745	0.88	57.05	Nonacosane
112	34.741	554553	0.458	129409	0.41	57.00	
113	34.865	1750099	1.445	359329	1.14	71.10	Eicosane
114	35.060	534028	0.441	110229	0.35	71.05	Heptadecane, 8-methyl- (CAS)
115	35.149	517114	0.427	93548	0.30	85.05	Pentadecane, 8-hexyl-
116	35.270	320011	0.264	90321	0.29	108.95	
117	35.361	294734	0.243	80742	0.26	71.05	Tetracosane, 2,6,10,15,19,23-hexamethyl- (CAS)
118	35.412	201429	0.166	71576	0.23	57.00	
119	35.551	903943	0.747	161456	0.51	57.00	Octacosane
120	35.649	232415	0.192	68149	0.22	71.05	TRICOSANE
121	35.749	255376	0.211	61646	0.19	57.05	Dotriacontane (CAS)
122	35.863	549916	0.454	154967	0.49	71.05	Nonacosane
123	36.194	347682	0.287	63665	0.20	57.00	
124	36.403	557646	0.461	172972	0.55	57.00	Dotriacontane, 1-iodo-
125	36.758	451151	0.373	97411	0.31	57.00	Heneicosane
126	36.996	326823	0.270	76795	0.24	57.00	Docosane (CAS)
127	37.389	549543	0.454	160328	0.51	57.00	Eicosane
128	37.480	389503	0.322	121889	0.39	57.00	Tetracosane
129	37.687	238219	0.197	78354	0.25	71.05	
130	37.793	508503	0.420	117073	0.37	94.00	Ethanone, 1-(1H-pyrrol-2-yl)- (CAS)

Peak#	R.Time	Area	Area%	Height	Height%	Base m/z	Name
131	37.840	268440	0.222	103054	0.33	85.00	
132	37.920	2126795	1.757	585029	1.85	71.05	Tetratetracontane
133	38.092	1016934	0.840	288144	0.91	71.05	Eicosane
134	38.204	767718	0.634	141310	0.45	71.05	Eicosane
135	38.377	1020988	0.843	211759	0.67	71.05	11-Methylpentacosane
136	38.455	1516682	1.253	293077	0.93	71.05	Eicosane
137	38.565	887271	0.733	151471	0.48	145.95	
138	38.700	660277	0.545	207192	0.66	85.05	
139	38.747	952347	0.787	218944	0.69	85.00	Octadecane (CAS)
140	38.825	688291	0.568	153220	0.48	71.05	
141	38.971	1320057	1.090	262417	0.83	71.05	Tetracosane (CAS)
142	39.049	937941	0.775	172284	0.54	137.00	
143	39.150	563147	0.465	161645	0.51	71.05	Eicosane
144	39.260	612599	0.506	121489	0.38	57.00	Tetracosane
145	39.393	317840	0.263	60301	0.19	57.05	
146	39.475	232941	0.192	97088	0.31	71.00	
147	39.513	349120	0.288	88995	0.28	71.05	Pentadecane, 2,6,10,14-tetramethyl- (CAS)
148	39.635	485558	0.401	112787	0.36	71.05	Pentatriacontane (CAS)
149	39.801	410398	0.339	69715	0.22	160.00	
150	39.905	359100	0.297	92844	0.29	71.05	Eicosane
151	40.128	248937	0.206	64493	0.20	57.00	Tetracosane (CAS)
152	40.348	366683	0.303	121810	0.39	57.00	Tetracosane
153	40.429	215269	0.178	52318	0.17	71.05	Docosane (CAS)
154	40.827	224607	0.186	84781	0.27	57.00	Triacontane, 1-iodo-
155	40.895	249018	0.206	89031	0.28	71.05	
156	40.911	410124	0.339	88788	0.28	71.05	
157	41.258	211595	0.175	66580	0.21	57.00	Docosane (CAS)
158	41.333	399664	0.330	103181	0.33	57.00	Hexadecane, 1-iodo-
159	41.516	641653	0.530	122769	0.39	71.05	Hexatriacontane
160	41.747	1093238	0.903	324534	1.03	71.05	Docosane (CAS)
161	41.891	914089	0.755	175922	0.56	57.00	
162	41.977	790582	0.653	171540	0.54	71.05	Docosane (CAS)
163	42.136	961477	0.794	191670	0.61	57.00	
164	42.221	869152	0.718	229019	0.72	71.05	Oxalic acid, bis(6-ethyloct-3-yl) ester
165	42.316	382774	0.316	94007	0.30	57.00	
166	42.442	1327722	1.097	263106	0.83	71.05	Tetratriacontane (CAS)
167	42.549	1602739	1.324	264165	0.84	150.00	2-Methoxy-4-vinylphenol
168	42.707	1006820	0.832	233454	0.74	71.10	Dotriacontane
169	42.797	685963	0.567	192948	0.61	43.00	Docosane (CAS)
170	42.867	1036546	0.856	189414	0.60	71.05	Docosane (CAS)
171	42.970	296900	0.245	130604	0.41	57.00	
172	43.010	277302	0.229	143190	0.45	99.10	
173	43.025	460399	0.380	139658	0.44	28.95	
174	43.109	443915	0.367	146213	0.46	71.05	
175	43.170	372436	0.308	148388	0.47	31.95	
176	43.230	849143	0.701	165117	0.52	57.00	
177	43.369	622130	0.514	135194	0.43	197.00	
178	43.434	600649	0.496	126184	0.40	71.00	
179	43.523	583143	0.482	108839	0.34	195.00	
180	43.605	358564	0.296	86201	0.27	71.05	
181	43.858	604221	0.499	107800	0.34	81.00	
182	43.946	505693	0.418	123837	0.39	71.05	Tetracosane
183	44.240	722718	0.597	114194	0.36	191.05	2,4-Di-tert-butylphenol
184	44.371	380426	0.314	73697	0.23	57.00	
185	44.590	498531	0.412	96673	0.31	195.00	2-Ethylhexyl salicylate
186	44.859	375130	0.310	103034	0.33	71.05	Hexadecane, 2,6,10,14-tetramethyl-
		121073433	100.000	31623663	100.00		

Tabel Lampiran F6. Hasil GC-MS Kopi Ceri Asalan-Perkecambahan

KROMATOGRAM SAMPLE KOPI



Peak Report TIC

Peak#	R.Time	Area	Area%	Height	Height%	Base m/z	Name
1	8.527	1252826	1.123	165842	0.58	39.90	Methylene chloride
2	8.695	250065	0.224	106574	0.37	39.95	
3	8.734	279473	0.250	96984	0.34	43.95	
4	8.765	480846	0.431	90787	0.31	39.95	
5	11.046	566354	0.508	234966	0.81	43.00	OCTANE, 5-ETHYL-2-METHYL-
6	15.439	242754	0.218	76216	0.26	57.00	Tetradecane
7	16.042	435055	0.390	109433	0.38	79.00	PYRIDINE
8	16.907	229469	0.206	72544	0.25	57.00	Tetradecane
9	17.350	217199	0.195	75054	0.26	71.05	Dodecane, 4,6-dimethyl-
10	17.588	238132	0.213	84977	0.29	71.05	Dodecane, 4,6-dimethyl-
11	17.729	2350251	2.106	817051	2.83	71.05	Dodecane, 4,6-dimethyl-
12	17.988	366612	0.329	135396	0.47	71.05	Dodecane, 4,6-dimethyl-
13	18.195	285225	0.256	99748	0.35	71.05	Hexadecane
14	18.411	301284	0.270	111018	0.38	71.10	Hexadecane
15	18.790	1187654	1.064	330184	1.14	94.00	Pyrazine, methyl- (CAS)
16	19.428	577815	0.518	207311	0.72	71.05	Dodecane, 4,6-dimethyl-
17	19.725	206584	0.185	69192	0.24	71.00	Dodecane, 4,6-dimethyl-
18	20.026	342214	0.307	79160	0.27	43.00	Butanoic acid, 3-oxo-, methyl ester (CAS)
19	20.118	207415	0.186	57982	0.20	69.00	3-Decene, 2,2-dimethyl-, (E)-
20	20.556	463742	0.416	144902	0.50	108.05	Pyrazine, 2,5-dimethyl-
21	20.736	668158	0.599	205285	0.71	108.00	Pyrazine, 2,6-dimethyl- (CAS)
22	20.960	257119	0.230	68156	0.24	107.00	Pyrazine, ethyl-
23	21.330	257414	0.231	76920	0.27	108.00	Pyrazine, 2,3-dimethyl- (CAS)
24	21.718	443861	0.398	161096	0.56	57.00	Heneicosane
25	22.351	216914	0.194	60650	0.21	43.00	Hexadecane
26	22.488	365478	0.328	123279	0.43	121.05	Pyrazine, 2-ethyl-6-methyl- (CAS)
27	22.695	243757	0.218	55105	0.19	121.05	Pyrazine, 2-ethyl-5-methyl-
28	22.837	473799	0.425	130193	0.45	57.05	Hexadecane
29	23.067	939167	0.842	191774	0.66	57.00	
30	23.320	565716	0.507	101890	0.35	57.05	Heptadecane
31	23.567	403375	0.361	120017	0.42	57.00	Dodecane, 4,6-dimethyl-
32	23.635	270721	0.243	101656	0.35	71.05	Tridecanol, 2-ethyl-2-methyl-
33	23.738	3592829	3.220	1186272	4.11	71.05	Dodecane, 4,6-dimethyl-
34	23.834	426958	0.383	143097	0.50	43.00	Hexadecane
35	24.040	1225653	1.098	303450	1.05	57.00	Hexadecane
36	24.143	678982	0.608	236876	0.82	57.05	Hexadecane
37	24.208	481188	0.431	145012	0.50	71.05	Hexadecane
38	24.379	812426	0.728	144208	0.50	71.00	Eicosane
39	24.526	267548	0.240	73613	0.26	71.05	
40	24.708	1202966	1.078	231742	0.80	43.00	2-Propanone, 1-(acetyloxy)-
41	24.877	289937	0.260	93548	0.32	57.00	Hexadecane
42	25.006	840638	0.753	154874	0.54	71.00	Hexadecane
43	25.229	871857	0.781	330072	1.14	71.05	Hexadecane
44	25.336	208697	0.187	42796	0.15	43.00	

Peak#	R.Time	Area	Area%	Height	Height%	Base m/z	Name
45	25.526	526201	0.472	108891	0.38	71.05	Nonadecane (CAS)
46	25.647	282869	0.253	86415	0.30	71.05	Hexadecane
47	25.900	546317	0.490	89569	0.31	71.05	Octadecane (CAS)
48	26.185	404644	0.363	76977	0.27	94.95	Docosane, 11-decyl- (CAS)
49	26.769	471510	0.423	110782	0.38	81.00	2-Furanmethanol, acetate (CAS)
50	26.991	304863	0.273	104132	0.36	57.00	Pentadecane, 2-methyl- (CAS)
51	27.196	590666	0.529	218727	0.76	57.00	Heneicosane
52	27.478	213565	0.191	67890	0.24	57.00	Heneicosane
53	27.654	484367	0.434	102976	0.36	43.00	Nonadecane (CAS)
54	27.759	256662	0.230	82526	0.29	57.05	Heneicosane
55	27.920	533860	0.478	91506	0.32	57.00	Octadecane (CAS)
56	28.099	809773	0.726	163075	0.57	109.95	2-Furancarboxaldehyde, 5-methyl-
57	28.201	677895	0.607	166224	0.58	57.05	Hexadecane
58	28.284	290517	0.260	81477	0.28	71.05	Dodecane, 4,6-dimethyl-
59	28.399	769926	0.690	180271	0.63	57.00	Heneicosane
60	28.562	445198	0.399	126638	0.44	57.05	
61	28.640	229741	0.206	69752	0.24	43.00	
62	28.714	376082	0.337	108691	0.38	57.05	Pentadecane, 2,6,10-trimethyl-
63	28.831	528858	0.474	125728	0.44	71.05	Octadecane (CAS)
64	28.887	288131	0.258	97716	0.34	57.00	
65	29.020	3951806	3.541	1185533	4.11	71.05	Eicosane
66	29.184	701906	0.629	182163	0.63	71.00	
67	29.258	890408	0.798	292573	1.01	71.05	Eicosane
68	29.321	775458	0.695	263689	0.91	71.05	
69	29.402	499812	0.448	167261	0.58	71.05	
70	29.491	919639	0.824	192031	0.67	57.00	Eicosane
71	29.629	1396360	1.251	364271	1.26	71.05	Eicosane
72	29.765	1189477	1.066	342178	1.19	57.00	Eicosane
73	29.934	1132543	1.015	217523	0.75	42.00	Tetradecane
74	30.059	1964918	1.761	374351	1.30	97.95	2-Furanmethanol (CAS)
75	30.211	599856	0.538	117782	0.41	71.05	Hexadecane, 1-iodo-
76	30.313	1322791	1.185	410897	1.42	71.05	Pentadecane, 2,6,10,14-tetramethyl- (CAS)
77	30.408	211680	0.190	67127	0.23	71.05	2,6,10-Trimethyltridecane
78	30.568	235470	0.211	83479	0.29	71.05	
79	30.705	267333	0.240	87939	0.30	71.05	
80	30.776	448352	0.402	140734	0.49	57.00	Tridecane, 4-methyl-
81	30.827	343717	0.308	103738	0.36	43.00	
82	30.965	308316	0.276	95317	0.33	43.00	
83	31.015	362856	0.325	116870	0.41	69.00	Isotridecanol-
84	31.131	472488	0.423	94730	0.33	57.00	Octadecane (CAS)
85	31.226	213273	0.191	66979	0.23	71.05	Octadecane (CAS)
86	31.308	234305	0.210	68803	0.24	43.00	DODECANE, 4-METHYL-
87	31.850	562723	0.504	94151	0.33	57.00	2-Bromotetradecane
88	32.053	755987	0.677	230947	0.80	57.00	Eicosane
89	32.119	256186	0.230	89732	0.31	43.00	Heptadecane, 2-methyl- (CAS)
90	32.394	219801	0.197	48080	0.17	85.05	
91	32.580	374570	0.336	101940	0.35	71.00	Heptadecane
92	32.890	296323	0.266	79159	0.27	39.90	Sulfurous acid, hexyl tetradecyl ester
93	32.939	208626	0.187	93479	0.32	85.05	
94	32.950	503355	0.451	90726	0.31	71.00	1,2-Cyclohexanedicarboxylic acid, furfuryl undecyl ester
95	33.135	424383	0.380	133944	0.46	57.00	Hexadecane, 1-iodo-
96	33.245	558223	0.500	145755	0.51	57.00	Eicosane
97	33.355	285708	0.256	82892	0.29	43.00	
98	33.484	671471	0.602	142206	0.49	57.00	Eicosane
99	33.626	396365	0.355	109946	0.38	57.05	
100	33.710	2898355	2.597	920944	3.19	71.05	Eicosane
101	33.804	300666	0.269	93709	0.32	57.05	
102	33.924	1526014	1.368	339417	1.18	71.05	Eicosane
103	34.026	547185	0.490	149554	0.52	71.05	
104	34.089	510704	0.458	185266	0.64	57.00	
105	34.133	713757	0.640	193436	0.67	57.00	
106	34.259	774498	0.694	212416	0.74	71.05	
107	34.333	1084743	0.972	320594	1.11	57.00	Eicosane
108	34.444	1032343	0.925	249742	0.87	57.00	Eicosane
109	34.494	220892	0.198	189077	0.66	31.95	
110	34.530	708998	0.635	186616	0.65	71.05	
111	34.629	1469480	1.317	263206	0.91	57.00	Eicosane
112	34.743	511548	0.458	122989	0.43	57.00	
113	34.866	1592626	1.427	324576	1.13	71.05	Eicosane
114	35.060	513497	0.460	100761	0.35	57.05	Octadecane (CAS)
115	35.152	489741	0.439	95427	0.33	43.00	
116	35.266	290483	0.260	70890	0.25	108.95	
117	35.355	225854	0.202	65731	0.23	57.00	
118	35.550	770807	0.691	150031	0.52	57.05	
119	35.653	235822	0.211	56686	0.20	71.05	Octadecane (CAS)
120	35.859	578620	0.519	153265	0.53	71.05	Heneicosane
121	36.194	316878	0.284	63396	0.22	205.05	
122	36.403	503495	0.451	161302	0.56	71.05	Eicosane
123	36.763	463959	0.416	95935	0.33	57.05	Hexadecane
124	36.996	299051	0.268	73752	0.26	71.00	Nonacosane (CAS)
125	37.389	499538	0.448	149596	0.52	57.00	Eicosane
126	37.480	320330	0.287	107144	0.37	57.00	Tetracosane (CAS)
127	37.688	214768	0.192	69368	0.24	71.05	Tetracontane
128	37.794	420231	0.377	99707	0.35	94.00	
129	37.921	2216885	1.987	548460	1.90	71.05	Eicosane
130	38.095	913294	0.818	262726	0.91	71.05	Tetracosane (CAS)

Peak#	R.Time	Area	Area%	Height	Height%	Base m/z	Name
131	38.201	658495	0.590	131456	0.46	71.05	Pentadecane, 2,6,10,14-tetramethyl- (CAS)
132	38.379	1018233	0.912	197702	0.69	71.05	Octadecane (CAS)
133	38.451	1318653	1.182	263251	0.91	57.00	Docosane (CAS)
134	38.572	803190	0.720	142026	0.49	145.95	
135	38.746	1476672	1.323	203835	0.71	71.05	Octadecane (CAS)
136	38.834	674274	0.604	134226	0.47	57.05	
137	38.972	1124370	1.008	242583	0.84	71.05	Tetracosane (CAS)
138	39.051	791043	0.709	145922	0.51	137.00	
139	39.148	511670	0.459	147739	0.51	71.05	
140	39.264	541752	0.485	107584	0.37	57.00	Docosane (CAS)
141	39.391	262193	0.235	57366	0.20	57.05	
142	39.510	544529	0.488	88941	0.31	71.05	
143	39.638	466438	0.418	104580	0.36	57.00	Eicosyl nonyl ether
144	39.807	489383	0.439	67930	0.24	57.00	Tetracosane
145	39.898	279551	0.251	77050	0.27	57.05	Tetracosane
146	40.121	243981	0.219	69794	0.24	71.00	Tetracosane (CAS)
147	40.350	359162	0.322	119149	0.41	57.00	Docosane (CAS)
148	40.827	312350	0.280	82505	0.29	57.00	
149	40.933	425116	0.381	104501	0.36	71.00	Hexadecyl octyl ether
150	41.338	411999	0.369	101959	0.35	277.00	
151	41.518	560364	0.502	119069	0.41	71.05	Docosane (CAS)
152	41.747	998005	0.894	302717	1.05	71.05	Dotriacontane (CAS)
153	41.894	646109	0.579	154685	0.54	71.05	Docosane (CAS)
154	41.979	675331	0.605	167235	0.58	71.05	Nonacosane
155	42.140	896468	0.803	173181	0.60	71.05	Octadecane (CAS)
156	42.218	691369	0.620	207727	0.72	57.00	Tetracosane (CAS)
157	42.328	304886	0.273	77791	0.27	71.00	
158	42.441	1247683	1.118	241790	0.84	71.05	Tetratriacontane (CAS)
159	42.546	1343179	1.204	226244	0.78	150.00	2-Methoxy-4-vinylphenol
160	42.714	895076	0.802	231393	0.80	71.05	Tetratetracontane (CAS)
161	42.792	563873	0.505	157272	0.55	57.00	
162	42.871	932230	0.835	187732	0.65	71.05	Hexadecane, 2,6,10,14-tetramethyl- (CAS)
163	42.960	310877	0.279	117131	0.41	71.05	
164	43.035	364673	0.327	134058	0.46	57.00	
165	43.110	422057	0.378	128534	0.45	71.05	
166	43.160	380896	0.341	138780	0.48	57.05	
167	43.231	869681	0.779	163738	0.57	71.05	
168	43.363	555963	0.498	115483	0.40	197.00	
169	43.431	450642	0.404	99069	0.34	71.05	
170	43.610	238576	0.214	69228	0.24	195.00	
171	43.851	602401	0.540	105866	0.37	81.00	.alpha.-Furfuryliden-.alpha.-furylmethylamine
172	43.950	419484	0.376	121022	0.42	57.00	Tetrapentacontane
173	44.231	642776	0.576	101375	0.35	191.00	Phenol, 2,4-bis(1,1-dimethylethyl)- (CAS)
174	44.368	422569	0.379	74870	0.26	71.05	
175	44.591	411392	0.369	78348	0.27	195.00	
176	44.851	388813	0.348	93827	0.33	71.05	Dodecane, 2,6,11-trimethyl-
		111587746	100.000	28839773	100.00		

Tabel Lampiran F1. Komponen Senyawa Volatil Kopi Robusta Tanpa Perlakuan Perkeambahan dan Kopi Robusta yang Dikecambahkan pada Berbagai Tingkat Kematangan

NO	Volatil Compound	RT	Compound Category [a]	Odor Description [b]	Coffee Taster's Flavor Wheel Classification	Surface Area (%)[c]					
						Asalan-Non Perkecambahan	Asalan-Perkecambahan	Semi Matang-Non Perkecambahan	Semi Matang-Perkecambahan	Matang-Non Perkecambahan	Matang-Perkecambahan
Pyrazine and Derivatives											
1	Methyl-pyrazine	18.791	PZD	Nutty, cocoa, roasted	Nutty/cocoa	10,689	13,036	9,169	12,706	9,975	11,505
2	2,5-dimethyl pyrazine	20.556	PZD	Cocoa, roasted, nutty	Nutty/cocoa	4,542	5,090	4,092	5,127	4,636	4,285
3	2,6-dimethyl pyrazine	20.739	PZD	Cocoa, roasted, nutty	Nutty/cocoa	5,213	7,334	4,905	6,978	5,306	5,673
4	Ethyl pyrazine	20.962	PZD	Nutty, roasted, cocoa	Nutty/cocoa	2,267	2,822	-	2,948	-	2,695
5	2,3-dimethyl pyrazine	21.339	PZD	Nutty, roasted, cocoa	Nutty/cocoa	2,057	2,825	-	2,419	-	2,577
6	2-ethyl-6-methyl-pyrazine	22.487	PZD	Cocoa, roasted	Nutty/cocoa	2,937	4,012	3,175	4,732	2,791	3,550
7	2-ethyl-6-methyl-pyrazine	22.687	PZD	Cocoa, roasted	Nutty/cocoa	-	-	-	-	-	1,972
8	2-ethyl-5-methyl-pyrazine	22.687	PZD	Cocoa, nutty	Nutty/cocoa	2,028	2,676	-	2,947	-	-
9	Trimethyl pyrazine	23.056	PZD	Nutty, cocoa, potato, roasted	Nutty/cocoa	6,010	-	-	-	-	7,086
10	2-ethyl-3,5-dimethyl pyrazine	24.211	PZD	Nutty, burnt, roasted, coffee	Nutty/cocoa	-	-	-	-	3,711	-
11	Tetramethyl pyrazine	25.061	PZD	Nutty, sesame seeds, roasted coffee	Nutty/cocoa	5,466	-	3,967	-	4,284	-
12	2-Acetyl-3-methylpyrazine	31.302	PZD	Roasted, potatoes, nutty	Nutty/cocoa	-	-	-	2,765	-	-
TOTAL						**41,210**	**37,795**	**25,307**	**40,623**	**30,703**	**39,343**

Furan and Derivatives											
1	2-furanmethanol	30.059	FD	Caramel, coffee	Sweet	18,888	21,568	20,624	20,781	17,579	17,667
2	Furfuryl ethyl ether	43.858	FD	Sweet, fruity	Fruity	-	-	-	-	-	4,598
			TOTAL			**18,888**	**21,568**	**20,624**	**20,781**	**17.579**	**22,265**
Ketone and Derivates											
1	1-hidroxy-2-propanone	20.029	αHK	Caramel, sweet	Sweet	3,134	-	3,293	-	3,646	2,675
2	1-(2-furanyl) ethanone	26.180		Sweet, caramel, fruity	Fruity	-	-	-	-	2,437	-
			TOTAL			**3,134**	**-**	**3,293**	**-**	**6,083**	**2,675**
Aldehyde and Derivatives											
1	2-furancarboxaldehyde	24.993	AD	Sweet, nutty, caramel	Sweet	-	-	-	-	0,413	-
2	5-methyl-2-furancarboxaldehyde	28.101	AD	Sweet, caramel	Sweet	5,061	8,888	4,450	7,428	5,360	0,528
			TOTAL			**5,061**	**8,888**	**4,450**	**7,428**	**5,773**	**0,528**
Phenol and Derivatives											
1	2-methoxy-phenol (guaiacol)	35.266	PHD	Smoky, burnt, spicy	Roasted	2,108	-	0,342	-	2,336	-
2	2-methoxy-4-vinyphenol (4-vinylguaiacol)	42.537	PHD	Spicy, clove, phenolic	Spices	12,032	14,743	17,725	14,241	13,279	13,633
3	2,4-bis(1,1-dimethylethyl) phenol	44.231	PHD	Astringent, bitter		3,590	7,055	-	6,422	3,621	3,989
4	2,6-bis(1,1-dimethylethyl) phenol	44.252	PHD	Astringent, bitter		-	-	0,427	-	-	-
5	4-ethyl-2-methoxy phenol	39.073	PHD	Spicy, phenolic	Spices	-	-	6,834	-	-	-
			TOTAL			**17.731**	**21,798**	**25,328**	**20,663**	**19,263**	**17,622**
Ester and Derivatives											
1	2-furanmethanol acetate	26.765	ES	Sweet, fruity	Fruity	3,14	5,17	3,15	4,92	2.71	3,55
			TOTAL			**3,14**	**5,17**	**3,16**	**4,92**	**2,71**	**3,55**

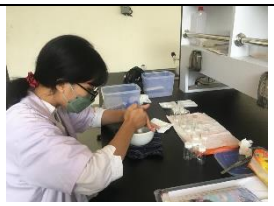
Pyridine											
1	Pyridine	16.042	PD	Fishy, sour	Sour/fermented	7,48	4,77	7,67	5,58	6,81	4,52
TOTAL						**7,48**	**4,77**	**7,67**	**5,58**	**6,81**	**4,52**
γ-Lactone											
1	Dihydro-2(3H)-furanone	29.930	γLC	Creamy, fatty, caramel	Sweet	-	-	10,17	-	7,96	9,50
TOTAL						**-**	**-**	**10,17**	**-**	**7,96**	**9,50**
Carbonic Acid											
1	Acetic acid	24.457	MA	Acidic, pungent, cheesy	Sour/fermented	3,36	-	-	-	3,15	-
TOTAL						**3,36**	**-**	**-**	**-**	**3,15**	**-**

Keterangan: [a]AD: *Aldehyde*, αHK: *α-Hydroxyketone*, ES: Ester, FD: *Furan derivatives*, γLC: *γ-Lacton*, MA: *Monocarbonik acid*, PD: *Pyridine*, PHD: *Phenol derivatives*, PZD: *Pyrazine derivatives*; [b]Keterangan aroma setiap senyawa volatil berdasarkan data yang diperoleh dari Flavornet, Zakidou *et al*. (2021), serta Ongo *et al*. (2021); [c]Menyatakan persentasi luas area tiap senyawa volatil dari total keseluruhan luas area senyawa volatil yang teridentifikasi

Lampiran G. Dokumentasi Kegiatan Penelitian

KEGIATAN	DOKUMENTASI
Penyortiran kopi	
Perebusan sampel	
Penirisan dan penurunan suhu sampel selama 1 jam	

Penyimpanan sampel selama 5 hari pada suhu ruang dalam wadah tertutup	
Pengeringan sampel	
Pengemasan sampel	
Maserasi sampel untuk pengujian kadar kafein	

Pengujian kadar fenol metode spektrofotometri	
Analisa senyawa flavor metode gc-ms	

CURRICULUM VITAE

A. Data Pribadi

1. Nama : Justasya Nanda Putri Buntu Payung
2. Tempat, tgl. lahir : Makassar, 20 Juni 2000
3. Alamat : BTN Bulurokeng Permai Blok C1/32
4. Kewarganegaraan : Warga Negara Indonesia

B. Riwayat Pendidikan

1. Tamat SD tahun 2012 di SD Negeri 1 Padduppa
2. Tamat SMP tahun 2015 di SMP Negeri 1 Mamasa
3. Tamat SMA tahun 2018 di SMA Negeri 1 Toraja Utara

C. Pekerjaan dan Riwayat Pekerjaan

- Jenis pekerjaan : Mahasiswa
- NIP atau identitas lain (NIK) : 7603033036000002
- Pangkat/jabatan : -