

DAFTAR PUSTAKA

- Abdeltaif, S. A., Sirelkhatim, K. A., & Hassan, A. B. 2018. Estimation of phenolic and flavonoid compounds and antioxidant activity of spent coffee and black tea (Processing) waste for potential recovery and reuse in Sudan. *Recycling*, 3(2). <https://doi.org/10.3390/recycling3020027>
- Adam, F., Agustina, R., & Fadhil, R. 2022. Pengujian cita rasa kopi arabika dengan metode cupping test. *Jurnal Ilmiah Mahasiswa*, 7, 517–521.
- Adi Ahmad Samin, Nurhayati Bialangi, Y. K. S. 2017. Penentuan kandungan fenolik total dan aktivitas antioksidan dari rambut jagung (*Zea mays L.*) yang tumbuh di daerah Gorontalo. Universitas Negeri Gorontalo.
- AEKI. 2012. *Statistik kopi asosiasi eksportir dan industri kopi Indonesia 2009-2011*. <https://www.aeki-aice.org/>
- Afriza, R., & Nilda, I. 2019. Analisis perbedaan kadar gula pereduksi dengan metode lane eynon dan luff school pada buah naga merah (*Hylocereus Polyrhizus*). *Jurnal Temapela*, 2(2), 90–96. <https://doi.org/10.25077/temapela.2.2.90-96.2019>
- Amanah, I., & Aznam, N. 2016. *Total phenol compound and antioxidant activity assay of extract combinations of sarang semut (Myrmecodia pendens Merr. & L.M. Perry) and kencur (Kaempferia galanga Linn.) by method B-Carotene Bleaching*. 1–9.
- Amiliyah, R., Sumono, A., & Hidayati, L. 2015. Deformasi plastik nylon thermoplastic setelah direndam dalam ekstrak biji kopi robusta. *Jurnal Pustaka Kesehatan*, 117(1), 117–121.
- Ana Farida, Evi Ristanti, A. C. K. 2013. Coffee is one of the most famous beverages in the world . word . Coffee favored because it has unique taste and flavor . However , coffee contains excess acid and caffeine which has negative impacts on health . Fermentation is one of the alternative meth. *Jurnal Teknologi Kimia Dan Industri*, 2(3), 70–75.
- Analianasari, A., Kenali, E. W., Berliana, D., Yulia, M., & Shintawati, S. 2022. Evaluasi pascapanen , cacat mutu, dan atribut kimia (kafein, asam, klorogenat) kopi Robusta Lampung Barat (Studi Kasus Gapoktan di Lampung Barat). *Jurnal Teknologi & Industri Hasil Pertanian*, 27(1), 42–52.
- Apak, R., Güçlü, K., Demirata, B., Özyürek, M., Çelik, S. E., Bektaşoğlu, B., Berker, K. I., & Özyurt, D. 2007. Comparative evaluation of various total antioxidant capacity assays applied to phenolic compounds with the Cuprac assay. *Molecules*, 12(7), 1496–1547. <https://doi.org/10.3390/12071496>
- Arifin, B., & Ibrahim, S. 2018. Struktur, bioaktivitas dan antioksidan flavonoid. *Jurnal Zarah*, 6(1), 21–29. <https://doi.org/10.31629/zarah.v6i1.313>
- Arjadi & Susatyo. 2010. Regenerasi sel pulau langerhans pada tikus putih (*rattus norvegicus*) diabetes yang diberi rebusan daging mahkota (*phaleria macrocarp lam*). *Sains Medika*, 2((2)), 117–126.
- Arumsari, G. A., Surya, R., Irmasuryani, S., & Sapitri, W. 2021. Analisis proses roasting pada kopi. *Jurnal Beta Kimia*, 1(2), 98–101. <http://ejurnal.undana.ac.id/index.php/jbkHalaman%7C98>
- Asni, Nur, and A. M. 2015. Teknologi penanganan pascapanen dan pengolahan hasil kopi liberika tunggal komposit (Libtukom). In *Balai Pengkajian Teknologi Pertanian Jambi Badan Penelitian dan Pengembangan Pertanian Kementerian*

Pertanian. Jakarta.

- Astuti, I. M., & Rustanti, N. 2014. Kadar protein, gula total, total padatan, viskositas dan nilai ph es krim yang disubstitusi inulin umbi gembili (*Dioscorea Esculenta*). *Journal of Nutrition College*, 3(3), 331–336. <https://doi.org/10.14710/jnc.v3i3.6584>
- Ayalign, A., & Sabally, K. 2013. Determination of Chlorogenic Acids (CGA) in Coffee Beans using HPLC. *American Journal of Research Communication*, 1(2), 78–91. www.usa-journals.com
- Azizah, D. N., Kumolowati, E., & Faramayuda, F. 2014. Penetapan kadar flavonoid metode alcl₃ pada ekstrak metanol kulit buah kakao (*Theobroma cacao L.*). *Kartika Jurnal Ilmiah Farmasi*, 2(2), 45–49. <https://doi.org/10.26874/kjif.v2i2.14>
- 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.
- Barus, W. B. J. 2019. Pengaruh lama fermentasi dan lama pengeringan terhadap mutu bubuk kopi. *Wahana Inovasi*, 8(2), 111–115. [file:///C:/Users/Asus/Downloads/2137-5223-1-SM \(1\).pdf](file:///C:/Users/Asus/Downloads/2137-5223-1-SM%20(1).pdf)
- Bastian, F., Hutabarat, O. S., Dirpan, A., Nainu, F., Harapan, H., Emran, T. Bin, & Simal-Gandara, J. 2021. From plantation to cup: Changes in bioactive compounds during coffee processing. *Foods*, 10(11), 1–27. <https://doi.org/10.3390/foods10112827>
- Belay, A., & Gholap, a. V. 2009. Characterization and determination of chlorogenic acids (CGA) in coffee beans by UV-Vis spectroscopy. *African Journal of Pure and Applied Chemistry*, 3(11), 234–240.
- Bosch, J. -C, & Lee, I. 1994. Wealth effects of food and drug administration (FDA) decisions. *Managerial and Decision Economics*, 15(6), 589–599. <https://doi.org/10.1002/mde.4090150606>
- BPS Pinrang, B. 2018. Statistik tanaman hortikultura Kabupaten Pinrang 2018. In *Badan Pusat Statistik Kabupaten Pinrang*.
- BSN (Badan Standardisasi Nasional). 2008. SNI 01-2907-2008: Biji Kopi. *Badan Standardisasi Nasional*, 1–16.
- Buffo, R. A., & Cardelli-Freire, C. 2004. Coffee flavour: An overview. *Flavour and Fragrance Journal*, 19(2), 99–104. <https://doi.org/10.1002/ffj.1325>
- Cahyani, Y. N., Kristiningrum, N., & Wulandari, L. 2015. Perbandingan kadar fenol total dan aktivitas antioksidan ekstrak metanol daun kopi robusta (*Coffea canephora*) dan arabika (*Coffea arabica*). In *Digital Repository Universitas Jember*. <http://repository.unej.ac.id/>
- Choiron, M. 2010. Penerapan GMP pada penanganan pascapanen kopi rakyat untuk menurunkan okratoksin produk kopi (Studi Kasus Di Sidomulyo, Jember). *Agrointek*, 4(2).
- Crozier, Alan, Mike N. Clifford, and H. A. 2008. *Plant secondary metabolites: occurrence, structure and role in the human diet*. John Wiley & Sons.
- Demam, J. M. 1997. *Kimia makanan*. Penerbit ITB. Bandung.
- Ditjenbun. 2012. *Pedoman praktis praktek budidaya kopi yang baik (Good Agricultural Practices/GAP on Coffee)*. Jakarta: Ditjenbun.
- Ditjenbun. 2015. *Statistik perkebunan indonesia 2014-2016, Kopi*.
- Ditjenbun. 2021. Statistik perkebunan unggulan nasional 2019-2021. *Direktorat Jendral Perkebunan Kementerian Pertanian Republik Indonesia*, 1–88. <https://ditjenbun.pertanian.go.id/template/uploads/2021/04/BUKU-STATISTIK->

- Edvan, B. T., Edison, R., & Same, M. 2016. Pengaruh suhu dan lama penyangraian pada mutu kopi robusta (*coffea robusta*). *Jurnal Agro Industri Perkebunan*, 4(1), 31–40.
- Evi Indah Wigati, & , Esti Pratiwi, T. F. N. dan N. F. U. 2018. Uji karakteristik fitokimia dan aktivitas antioksidan biji kopi robusta (*Coffea canephora* Pierre) Dari Bogor, Bandung dan Garut dengan metode DPPH (1,1-diphenyl-2-picrylhydrazyl). *Fitofarmaka Jurnal Ilmiah Farmasi*, 8(1), 59–66.
<http://link.springer.com/10.1007/978-3-319-76887>
<http://dx.doi.org/10.1016/B978-0-12-409517-5.00007-3%0A>
- Fadhil, R., Nurba, D., & Sukmawati, E. 2021. Sensory assessment of gayo arabica coffee taste based on various varieties and manual brewing devices. *Coffee Science*, 16. <https://doi.org/10.25186/v16i.1918>
- Farah, A. 2012. *Coffee constituents. Coffee: Emerging health effects and disease prevention*.
- 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>
- Farah, C. M. 2006. Donangelo. Phenolic compounds in coffee. *Brazilian Journal of Plant Physiology*, 18, 23–36.
- Farikha, I. N., Anam, C., & Widowati, E. 2013. Pengaruh jenis dan konsentrasi bahan penstabil alami terhadap karakteristik fisikokimia sari buah naga merah (*Hylocereus polyrhizus*). *Teknologi Pangan*, 2(1), 38.
- Fauzi, M., Choiron, M., Dewi, Y., & Astutik, P. 2017. Karakteristik kimia kopi luwak robusta artifisial terfermentasi oleh ragi luwak dan A-Amilase. *Jurnal Penelitian Pascapanen Pertanian* |, 14(Desember), 144–153.
- Fauzi, M., Novijanto, N., & Rarasati, D. P. 2019. Karakteristik organoleptik dan fisikokimia kopi jahe celup pada variasi tingkat penyangraian dan konsentrasi bubuk jahe. *Jurnal Agroteknologi*, 13(01), 1. <https://doi.org/10.19184/j-agt.v13i01.8370>
- Firdaus, G. M., Rizqiyati, H., & Nurwantoro. 2018. Pengaruh lama fermentasi terhadap rendemen , ph , total padatan terlarut dan mutu hedonik kefir whey. *Jurnal Teknologi Pangan*, 3(1), 70–79.
<https://ejournal3.undip.ac.id/index.php/tekpangan/article/view/22284%0>
- Fontes, S. T., Fernández, M. R., de Moura, C. M., & Meireles, S. S. 2009. Color stability of a nanofill composite: Effect of different immersion media. *Journal of Applied Oral Science*, 17(5), 388–391. <https://doi.org/10.1590/S1678-77572009000500007>
- Grace, H. A. 2017. Inventarisasi organoleptik, kandungan kafein, dan asam klorogenat pada kopi bubuk robusta (*Coffea canephora* L.) Di Kabupaten Tanggamus.
- Haile, M., & Kang, W. H. 2019. Antioxidant activity, total polyphenol, flavonoid and tannin contents of fermented green coffee beans with selected yeasts. *Fermentation*, 5(1). <https://doi.org/10.3390/fermentation5010029>
- Handayani, I. A., Eliyanoor, B., & Dira Ulva, D. 2016. Perbandingan kadar flavonoid ekstrak buah mahkota dewa (*Phaleria macrocarpa* [Scheff] Boerl) secara remaserasi dan perkolasi. *Jurnal Ilmiah Ibnu Sina*, 1(1), 79–87.
- Hanifah, N., & Kurniawati, D. 2013. Pengaruh larutan alkali dan yeast pada proses pembuatan kopi fermentasi. *Jurnal Teknologi Kimia Dan Industri*, 2(2), 162–

168.

- Haygreen, E. A. 2004. *Enhancing in ovo vaccination using novel DNA vaccines*. University of Bristol.
- Hečimović, I., Belščak-Cvitanović, A., Horžić, D., & Komes, D. 2011. Comparative study of polyphenols and caffeine in different coffee varieties affected by the degree of roasting. *Food Chemistry*, 129(3), 991–1000. <https://doi.org/10.1016/j.foodchem.2011.05.059>
- Hetzel, A. 2015. Fine Robusta Standards and Protocols. *Coffe Quality Institute*, 1–47. www.coffeeinstitute.org
- Hicks, A. 2002. Post-harvest processing and quality assurance for speciality/organic coffee products. *FAO Regional Office for Asia and the Pacific*, 6. <http://www.journal.au.edu/au techno/2002/jan2002/article2.pdf>
- Hilda, K. 2012. Validasi metode pengukuran kadar air bubuk perisa menggunakan moisture analyzer halogen HB43-S, sebagai alternatif metode oven dan karl fischer. *Thesis*.
- Husniati, H., Sari, M. Y., & Sari, A. 2021. Kajian : karakterisasi senyawa aktif asam klorogenat dalam kopi robusta sebagai antioksidan review : Characterization of active compounds in Robusta coffee as antioxidants. *Teknologi Argo Industri*, 12(2), 34–39.
- Kuncoro, S., Sutiarso, L., Nugroho, J., & Mashitoh, R. E. 2018. Kinetika reaksi penurunan kafein dan asam klorogenat biji kopi robusta melalui pengukusan sistem tertutup. *Agritech*, 38(1), 105–111.
- Lelyana, R. 2008. Pengaruh kopi terhadap kadar asam urat darah. Universitas Diponegoro. Semarang.
- Lemos, M. F., de Andrade Salustriano, N., de Souza Costa, M. M., Lirio, K., da Fonseca, A. F. A., Pacheco, H. P., Endringer, D. C., Fronza, M., & Scherer, R. 2022. Chlorogenic acid and caffeine contents and anti-inflammatory and antioxidant activities of *Green beans* of conilon and arabica coffees harvested with different degrees of maturation. *Journal of Saudi Chemical Society*, 26(3). <https://doi.org/10.1016/j.jscs.2022.101467>
- Leroy, T., Ribeyre, F., Bertrand, B., Charmetant, P., Dufour, M., Montagnon, C., Marraccini, P., & Pot, D. 2006. Genetics of coffee quality. *Brazilian Journal of Plant Physiology*, 18(1), 229–242. <https://doi.org/10.1590/S1677-04202006000100016>
- Lin, C. C. 2010. Approach of improving coffee industry in Taiwan-promote quality of coffee bean by fermentation. *The Journal of International Management Studies*, 5((1)), 154–159.
- Lingle, T. R., & Menon, S. N. 2017. Cupping and Grading-Discovering Character and Quality. *The Craft and Science of Coffee*, 181–203. <https://doi.org/10.1016/B978-0-12-803520-7.00008-6>
- Mahendradatta, M. 2007. *angan Aman dan Sehat: Prasyarat Kebutuhan Mutlak Sehari-hari*. Lembaga Penerbitan Universitas Hasanuddin.
- Maramis, R.K., C. Gayatri, dan W. F. 2013. Analisis Kafein Dalam Kopi Bubuk Di Kota Manado Menggunakan Spektrofotometri Uv-Vis. *Jurnal Ilmiah Farmasi*, 2((4)), : 122-128.
- Marandi, A., Polikarpus, M., & Jöeleht, A. 2013. A new approach for describing the relationship between electrical conductivity and major anion concentration in natural waters. *Applied Geochemistry*, 38, 103–109. <https://doi.org/10.1016/j.apgeochem.2013.09.003>

- Maxted, N., Dulloo, E., Ford-Lloyd, B. V., Iriondo, J. M., & Jarvis, A. 2008. Gap analysis: A tool for complementary genetic conservation assessment. *Diversity and Distributions*, 14(6), 1018–1030. <https://doi.org/10.1111/j.1472-4642.2008.00512.x>
- Keputusan Menteri Pertanian Nomor : 511/Kpts/PD.310/9/2006, (2006).
- Mulato, S. 2002. Pengolahan dan komposisi kimia biji kopi: pengaruhnya terhadap cita rasa seduhan. In *Materi pelatihan uji cita rasa kopi, Pusat Penelitian Kopi dan Kakao*. Materi pelatihan uji cita rasa kopi, Pusat Penelitian Kopi dan Kakao,.
- Muzaifa, M., Hasni, D., Patria, A., & Abubakar, A. 2018. Sensory and microbial characteristics of civet coffee. *International Journal on Advanced Science, Engineering and Information Technology*, 8((1)), 165–171.
- Naidu, K. A. 2016. Erratum to: Extensive next-generation sequencing analysis in chronic lymphocytic leukemia at diagnosis: clinical and biological correlations (J Hematol Oncol. (2016) 9 (88) DOI:10.1186/s13045-016-0320-z). *Journal of Hematology and Oncology*, 9(1), 1–3. <https://doi.org/10.1186/s13045-016-0331-9>
- Najiyati, S. 2004. *Danarti, budidaya tanaman kopi dan penanganan pascapanen* .
- Narasinga, R. V., & Kaladhar, D. S. V. G. K. 2012. Biochemical and phytochemical analysis of the medicinal plant, Kaempferia galanga rhizome extracts. *International Journal of Scientific Research*, 3((1)), 18–20.
- 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*, 2017. <https://doi.org/10.1155/2017/6435086>
- Novita, E., Syarief, R., Noor, E., & Mulato, D. S. 2010. Peningkatan mutu biji kopi rakyat dengan pengolahan semi basah berbasis produksi bersih (smallholder coffee bean quality improvement with semi wet processing based on clean production). *Jurnal Agroteknologi*, 4(01), 76–90.
- Oestreich-Janzen, S. 2010. *Chemistry of Coffee*. CAFEA GmbH.
- Oktadina, F. D., Argo, B. D., & Hermanto, M. B. 2013. Pemanfaatan nanas (ananas comosus L. Merr) untuk penurunan kadar kafein dan perbaikan cita rasa kopi (coffea sp) dalam pembuatan kopi bubuk. *Jurnal Keteknik Pertanian Tropis Dan Biosistem*, 1(3), 265–273.
- Oriza Sativa, Y. dan B. 2014. Karakteristik fisik buah kopi, kopi beras dan hasil olahan kopi rakyat di Desa Sindang Jati, Kabupaten Rejang Lebong. *Jurnal Agroindustri, ISSN 2088-*
- Panche, A. N., Diwan, A. D., & Chandra, S. R. 2016. Flavonoids: An overview. *Journal of Nutritional Science*, 5. <https://doi.org/10.1017/jns.2016.41>
- Panggabean, E. 2011. *Buku Pintar Kopi*. PT Agromedia Pustaka.
- Patra, A. K., & Saxena, J. 2010. A new perspective on the use of plant secondary metabolites to inhibit methanogenesis in the rumen. *Phytochemistry*, 71(11–12), 1198–1222. <https://doi.org/10.1016/j.phytochem.2010.05.010>
- Pavun, L., Uskoković-Marković, S., Jelikić-Stankov, M., Dikanović, D., & Durdević, P. 2018. Determination of flavonoids and total polyphenol contents in commercial apple juices. *Czech Journal of Food Sciences*, 36(3), 233–238. <https://doi.org/10.17221/211/2017-CJFS>
- Pellegrini, N., Serafini, M., Colombi, B., Del Rio, D., Salvatore, S., Bianchi, M., & Brighenti, F. 2003. Total antioxidant capacity of plant foods, beverages and oils

- consumed in Italy assessed by three different in vitro assays. *Journal of Nutrition*, 133(9), 2812–2819. <https://doi.org/10.1093/jn/133.9.2812>
- Permentan. 2014. *Peraturan Menteri Pertanian Nomor 49/Permentan/OT.140/4/2014 tentang Pedoman Teknis Budidaya Kopi yang baik (Good Agriculture Practices/GAP on Coffeee)*.
- Pertanian, K. 2016. *Outlook kopi komoditas pertanian subsektor perkebunan*. Pusat Data dan Sistem Informasi Pertanian.
- Prastowo, B., Karmawati, E., Indrawanto, C., & Munarso, S. J. 2010. *Budidaya dan pascapanen kopi*. Pusat Penelitian dan Pengembangan Perkebunan.
- Purwanto, E. H., Setyabudi, S., & Supriyanto. 2019. Aktivitas Mikrob Dalam Pulp Biji Kakao (*Theobroma cacao L.*) Selama Fermentasi Dengan Penambahan Ragi Tape Microbial Activities In Cocoa (*Theobroma Cacao L.*) Pulp During Fermentation With Ragi Tape Addition. *Journal of Industrial and Beverage Crops*, 6(Nomer 1, Maret 2019), 21–32.
- Puslitkoka. 2006. *Pedoman Teknis Tanaman Kopi*.
- Rahardjo, P. 2012. *Kopi*. Penebar Swadaya Grup.
- Rahayoe, S., Lumbanbatu, J., & Nugroho, W. K. J. 2009. Pengaruh suhu dan lama penyangraian terhadap sifat fisik-mekanis biji kopi robusta. *Jurnal Penelitian. Yogyakarta: UGM*.
- Rahmawati, A., Program, S., Analis, S., Fakultas, K., Keperawatan, I., & Kesehatan, D. 2017. Pentingnya pengolahan basah (wet processing) buah kopi robusta (*coffea robusta lindl.ex.de.will*) untuk menurunkan resiko kecacatan biji hijau saat coffee grading. *Prosiding Seminar Nasional Publikasi Hasil-Hasil Penelitian dan Pengabdian Masyarakat* .
- Ramalakshmi, K., & Raghavan, B. 1999. Caffeine in coffee: Its removal. Why and how? *Critical Reviews in Food Science and Nutrition*, 39(5), 441–456. <https://doi.org/10.1080/10408699991279231>
- Ridwansyah, S. 2003. dan terdiri atas banyak jenis antara *Coffea arabica*, *Coffea Robusta* dan *Coffea liberica*. Negara asal tanaman kopi adalah Abessinia yang tumbuh di dataran tinggi. ©2003. *Pengolaan Kopi*, 1–19.
- Rojas-González, A., Figueroa-Hernández, C. Y., González-Rios, O., Suárez-Quiroz, M. L., González-Amaro, R. M., Hernández-Estrada, Z. J., & Rayas-Duarte, P. 2022. Coffee Chlorogenic Acids Incorporation for Bioactivity Enhancement of Foods: A Review. *Molecules*, 27(11), 1–23. <https://doi.org/10.3390/molecules27113400>
- Salla, M. H. 2009. *Influence of genotype, location and processing methods on the quality of coffee (coffea arabica L.)*. School of Graduate Studies Hawassa University,awassa. Ethiopia.
- Salmaa Dwiranti, N., Ardiansyah, A., & Asiah, N. 2019. Sensory attributes of cold brew coffee products at various resting time after roasting process. *Pelita Perkebunan (a Coffee and Cocoa Research Journal)*, 35(1), 42–50. <https://doi.org/10.22302/icri.jur.pelitaperkebunan.v35i1.349>
- Santoso, J., & Riyanta, A. B. 2020. Pengaruh perbedaan konsentrasi pelarut pengekstrak terhadap stabilitas sifat fisik dan aktivitas antibakteri pada sediaan foot sanitizer spray kombinasi ekstrak biji kopi dan rimpang jahe. *PHARMACY: Jurnal Farmasi Indonesia (Pharmaceutical Journal of Indonesia)*, 17(2), 264. <https://doi.org/10.30595/pharmacy.v17i2.6034>
- Sari, L. I. 2001. Mempelajari proses pengolahan kopi bubuk (*coffea canephora*) altenatif dengan menggunakan suhu dan tekanan rendah (Doctoral dissertation.

- Bogor Agricultural University (IPB)).
- SCAA. 2015. SCAA Protocols Cupping Specialty Coffee. In *Specialty Coffee Association of America*. Specialty Coffee Association of America. <http://www.scaa.org/?page=resources&d=coffee-protocols>
- Selmar, D., Bytof, G., Knopp, S. E., & Breitenstein, B. 2006. Germination of coffee seeds and its significance for coffee quality. *Plant Biology*, 8((02)), 260–264.
- Setyani, S., & Grace, H. A. 2018. Karakteristik sensori, kandungan kafein, dan asam klorogenat kopi bubuk robusta (*Coffea canephora* L.) di Tanggamus, Lampung. *Seminar Nasional Perhimpunan Ahli Teknologi Pangan Indonesia. Universitas Lampung. Lampung*, 98–107.
- Shabrina, Z. U., & Susanto, W. H. 2017. Pengaruh suhu dan lama pengeringan dengan metode cabinet dryer terhadap karakteristik manisan kering apel varietas anna (*Malus domestica* BORKH). *Jurnal Pangan Dan Agroindustri*, 5(3), 60–71.
- Shashank Kumar and Abhay K. Pandey. 2013. Chemistry and biological activities of flavonoids: An Overview. *The Scientific World Journal*.
- Silalahi, I. H., Wahyuni, N., & Irwan, I. 2021. Fotodegradasi fenol dalam lempung terpillar tio2 (Photodegradation of Phenol on Tio2-Pillared-Kaolinite). *Indonesian Journal of Pure and Applied Chemistry*, 3(2), 26. <https://doi.org/10.26418/indonesian.v3i2.46491>
- Sinaga, H. L. R., Bastian, F., & Syarifuddin, A. 2021. Effect of decaffeination and re-fermentation on level of caffeine, chlorogenic acid and total acid in *Green bean Robusta* coffee. *IOP Conference Series: Earth and Environmental Science*, 807(2). <https://doi.org/10.1088/1755-1315/807/2/022069>
- SNI. 1992. *Cara Uji Gula SNI 01-2892-1992*. Badan Standarisasi Nasional Indonesia, Jakarta.
- SNI. 2006. *Bahan tambahan pangan – Persyaratan perisa dan penggunaan dalam produk pangan*. 7152(01).
- Starfarm. 2009. *Pengolahan Kopi Secara basah*. <http://www.starfarmagris.co.cc/2009/06/pengolahankopi-sara-basih.html>
- Starfarm. 2010. *Pengolahan Pascapanen Kopi*.
- Sulistiyowati, S. 2002. *Metode Uji Cita Rasa Kopi. Materi Pelatihan Uji Cita Rasa Kopi*. Pusat Penelitian Kopi dan Kakao Indonesia.
- Sumirat, U., Bellanger, B., L'Anthoëne, V., Mawardi, S., Nugroho, D., Priyono, W. T., ... & Crouzillat, D. 2012. Genetic diversity assesment in Indonesian *Coffea canephora* collection using SSR markers. *N The 24th International Conference on Coffee Science*, 12.
- Sunarharum, W. B., & Farhan, M. 2020. Effect of manual brewing techniques on the sensory profiles of Arabica coffees (Aceh Gayo wine process and Bali Kintamani honey process). *IOP Conference Series: Earth and Environmental Science*, 454(1). <https://doi.org/10.1088/1755-1315/454/1/012099>
- Supriadi, H., Randriani, E., & Towaha, J. 2016. Korelasi antara ketinggian tempat, sifat kimia tanah, dan mutu fisik biji kopi arabika di dataran tinggi Garut. *Jurnal Tanaman Industri Dan Penyegar*, 3((1)), 45–52.
- Suslick, B. A., Feng, L., & Suslick, K. S. 2010. *Ac902823W.Pdf*. 82(5), 2067–2073.
- Sutarsi, Rhosida, E., & Taruna, I. 2016. Penentuan tingkat sangrai kopi berdasarkan sifat fisik kimia menggunakan mesin penyangrai tipe rotari. *Jurnal Apta*, 5(1), 306–312.
- Suyatma. 2009. Diagram Warna Hunter (Kajian Pustaka). *Jurnal Penelitian Ilmiah*

- Teknologi Pertanian, Institut Pertanian Bogor*, 8–9.
- Tamang, J. P., Shin, D. H., Jung, S. J., & Chae, S. W. 2016. Functional properties of microorganisms in fermented foods. *Frontiers in Microbiology*, 7(APR), 1–13. <https://doi.org/10.3389/fmicb.2016.00578>
- Tarigan, E. B., & Towaha, J. 2017. Pengaruh tingkat kematangan buah, serta lama fermentasi dan penyangraian biji terhadap karakter fisikokimia kopi Robusta. *Jurnal Tanaman Industri Dan Penyegar*, 4((3)), 163–170.
- Tawali, A. B., Abdullah, N., & Wiranata, B. S. 2018. Pengaruh fermentasi menggunakan bakteri asam laktat yoghurt terhadap cita rasa kopi Robusta (*Coffea Robusta*). *Canrea Journal: Food Technology, Nutritions, and Culinary Journal*, 90–97. <https://doi.org/10.20956/canrea.v1i1.26>
- Tello, J., Viguera, M., & Calvo, L. 2011. Extraction of caffeine from Robusta coffee (*Coffea canephora* var. Robusta) husks using supercritical carbon dioxide. *Journal of Supercritical Fluids*, 59, 53–60. <https://doi.org/10.1016/j.supflu.2011.07.018>
- Tsao, R. 2010. Chemistry and biochemistry of dietary polyphenols. *Nutrients*, 2(12), 1231–1246. <https://doi.org/10.3390/nu2121231>
- Vermerris, W., & Nicholson, R. 2006. Phenolic compound biochemistry, chapter 1: Families of phenolic compounds and means of classification. *Phenolic Compound Biochemistry*, 1–34.
- Villanueva-Rodríguez, M., Bello-Mendoza, R., Wareham, D. G., Ruiz-Ruiz, E. J., & Maya-Treviño, M. L. 2014. Discoloration and organic matter removal from coffee wastewater by electrochemical advanced oxidation processes. *Water, Air, and Soil Pollution*, 225(12). <https://doi.org/10.1007/s11270-014-2204-6>
- Wang, N., & Lim, L.-T. 2012. Physicochemical Changes of Coffee Beans During Roasting. *Journal of Agricultural and Food Chemistry*, 60, 5446–5453.
- Wibowo, W. A., Sulaiman, T. N. S., Supriyadi, S., & Daryono, B. S. 2022. Computational study of natural compounds in melon fruit (*Cucumis melo* L. 'GMP') as inhibitor of epidermal growth factor receptor protein . *Proceedings of the 7th International Conference on Biological Science (ICBS 2021)*, 22(Icbs), 186–192. <https://doi.org/10.2991/absr.k.220406.028>
- Widyotomo, S., Mulato, S., Purwadaria, H. K., & Syarief, A. M. 2009. Decaffeination process characteristic of Robusta coffee in single column reactor using ethyl acetate solvent. *Pelita Perkebunan (a Coffee and Cocoa Research Journal)*, 25((2)).
- Widyotomo, usianto dan S. 2013. Mutu dan cita rasa kopi Arabika hasil beberapa perlakuan fermentasi: suhu, jenis wadah, dan penambahan agens fermentasi. *Pelita Perkebunan*, 29(3), 220–239.
- Winarno, F. G. 2004. *Kimia pangan dan gizi*. Gramedia Pustaka Utama.
- Winarno, R. A., & Indah Br PA, M. 2020. Karakteristik mutu dan fisik biji kopi arabika dengan beberapa metoda pengolahan di Kabupaten Simalungun Propinsi Sumatera Utara. *Jurnal Agrica Ekstensi*, 14(1), 86–93.
- Winarsi, H., Sasongko, N. D., Purwanto, A., & Nuraeni, I. 2014. Effect of cardamom leaves extract as antidiabetic, weight lost and hypocholesterolemic to alloxan-induced Sprague Dawley diabetic rats. *International Food Research Journal*, 21(6), 2253–2261.
- Wirman, R. P., Wardhana, I., & Isnaini, A. 2019. *Jurnal Fisika Kajian Tingkat Akurasi Sensor pada Rancang Bangun Alat Ukur Total Dissolved*. 9(1), 37–46.
- Yahmadi, M. 2007. *Rangkaian perkembangan dan permasalahan budidaya dan*

pengolahan kopi di indonesia. Asosiasi Eksportir Kopi Indonesia.

Yusmarini. 2011. Senyawa polifenol pada kopi : pengaruh pengolahan, metabolisme dan hubungannya dengan kesehatan. In *Sagu* (Vol. 10, Issue 2, pp. 22–30).

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>

L

A

M

P

I

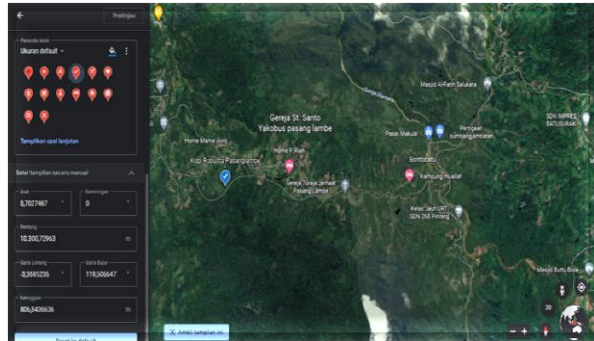
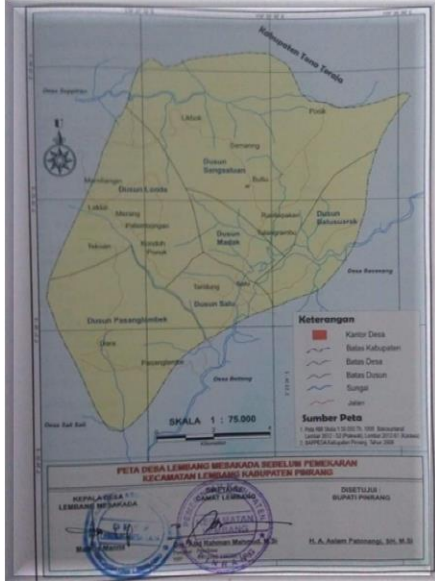
R

A

N

LAMPIRAN

Lampiran 1. Titik Lokasi Penelitian



Lampiran 2 Hasil Pengujian Cupping Test Dengan Metode Berbeda

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

LAPORAN HASIL UJI CITARASA
(Report of Cup Testing)
No. 02.22.1.0336 - C

FR-IP. 5.10.01.02.01-C3

Nomer Contoh (Sample Number) : 02.22.1.0336
Tanggal Penerimaan Contoh (Sample received) : 15-08-2022
Tanggal Pengujian (Date of testing) : 22-08-2022
Jenis Contoh (Kind of sample) : Biji kopi/green beans Robusta DP
Identitas Contoh : Kopi Robusta Pinrang Sulawesi Selatan Natural (Dry Process)

Karakteristik (Characteristic)	Skor Citarasa (Cup testing Score)**	Karakteristik (Characteristic)	Skor Citarasa (Cup testing Score)**
Fragrance/Aroma	7.75	Uniform Cups	10.00
Flavor	7.75	Balance	7.75
Aftertaste	7.75	Clean Cups	10.00
Salt/Acid	7.50	Overall	7.75
Bitter/Sweet	7.50	Taints-Faults	0.00
Mouthfeel/Body	7.50	Final Score**	81.25

Notes: Brown Sugar, Spicy, Chili Like.

* 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

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).

Jember, 22-08-2022
Manajer Teknis
Ariat Budi Haryono Sari, S.TP, M.Si

Page 2 of 2

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

LAPORAN HASIL UJI CITARASA
(Report of Cup Testing)
No. 02.22.1.0337 - C

FR-IP. 5.10.01.02.01-C3

Nomer Contoh (Sample Number) : 02.22.1.0337
Tanggal Penerimaan Contoh (Sample received) : 15-08-2022
Tanggal Pengujian (Date of testing) : 22-08-2022
Jenis Contoh (Kind of sample) : Biji kopi/green beans Robusta WP
Identitas Contoh : Kopi Robusta Pinrang Sulawesi Selatan Semi Wash.

Karakteristik (Characteristic)	Skor Citarasa (Cup testing Score)**	Karakteristik (Characteristic)	Skor Citarasa (Cup testing Score)**
Fragrance/Aroma	8.00	Uniform Cups	10.00
Flavor	7.75	Balance	7.50
Aftertaste	7.50	Clean Cups	10.00
Salt/Acid	7.25	Overall	7.50
Bitter/Sweet	7.00	Taints-Faults	0.00
Mouthfeel/Body	7.50	Final Score**	80.00

Notes: Brown Sugar, Spicy, Coriander.

* 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

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).

Jember, 22-08-2022
Manajer Teknis
Ariat Budi Haryono Sari, S.TP, M.Si

Page 2 of 2



Lampiran 3. Hasil Pengujian Warna Kopi Robusta dan Analisis Sidik Ragam (ANOVA)

Sam pel	A1			A2			A3			A4		
	l	a	b	l	a	b	l	a	b	l	a	b
U1	49.2	-7.2	34.3	40.0	2.9	44.7	70.3	33.7	24.9	30.5	7.4	4.1
U2	48.7	-6.9	29.5	39.4	3.3	48.6	70.1	26.7	22.0	27.3	5.1	4.1
U3	46.5	-5.5	28.7	42.2	0.7	37.8	68.8	30.7	21.5	27.9	5.7	6.4
U4	47.0	-5.5	29.1	43.7	1.1	37.9	68.7	34.2	19.9	27.5	5.5	6.6
U5	47.0	-5.5	29.2	43.8	0.6	34.7	63.1	34.2	19.1	27.3	5.7	6.6

Lampiran 4. Hasil Pengujian Warna Kopi Robusta dan Analisis Sidik Ragam (ANOVA)

ANOVA

Nilai_Kecerahan

Sum of Squares	df	Mean Square	F	Sig.
----------------	----	-------------	---	------

Between Groups	2498.341	3	832.780	24983405.333	.000
Within Groups	.000	8	.000		
Total	2498.341	11			

Nilai_Keceraan

Duncan^a

Perlakuan	N	Subset for alpha = 0.05			
		1	2	3	4
Metode Petani	3	28.1033			
Semi Basah	3		41.8167		
Natural	3			47.6767	
Basah	3				68.2033
Sig.		1.000	1.000	1.000	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

ANOVA

Nilai_Kekuningan_b

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2387.067	3	795.689	74.631	.000
Within Groups	85.293	8	10.662		
Total	2472.360	11			

Nilai_Kekuningan_b

Duncan^a

Perlakuan	N	Subset for alpha = 0.05			
		1	2	3	4
Hitam	3	4.8667			
Merah	3		22.8000		

Hijau	3			31.0000	
Kuning	3				43.7333
Sig.		1.000	1.000	1.000	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

ANOVA

Nilai_Kemerahan_a

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	4070.206	3	1356.735	395.233	.000
Within Groups	54.924	16	3.433		
Total	4125.130	19			

Nilai_Kemerahan_a

Duncan^a

Perlakuan	N	Subset for alpha = 0.05			
		1	2	3	4
Hijau	5	-6.1200			
Kuning	5		1.7200		
Hitam	5			5.8800	
Merah	5				31.9000
Sig.		1.000	1.000	1.000	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 5.000.

Lampiran 5. Tabel Pengujian Densitas

Jenis Warna	Ulangan	Berat/Liter	Rata-Rata Berat/Liter
Hijau	1	549	550
	2	551	
	3	550	
Kuning	1	589	589.45
	2	588,9	
	3	589.9	

Cherry Merah	1	641	640
	2	639	
	3	640	
Hitam	1	565	564.5
	2	563,1	
	3	564	

Lampiran 6. Hasil Analisis Sidik Ragam (ANOVA) Densitas

ANOVA

Densitas

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	14120.303	3	4706.768	14445.322	.000
Within Groups	2.607	8	.326		
Total	14122.909	11			

Densitas

Duncan^a

Jenis_Petik	N	Subset for alpha = 0.05			
		1	2	3	4
Hijau	3	550.33			
Hitam	3		564.33		
Kuning	3			589.63	
Cherry Merah	3				640.33
Sig.		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 7. Hasil Analisis Sidik Ragam (ANOVA) Kadar Air

ANOVA

Kadar_Air

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	9.813	3	3.271	98132.250	.000
Within Groups	.000	8	.000		
Total	9.813	11			

Kadar_Air

Duncan^a

Perlakuan	N	Subset for alpha = 0.05			
		1	2	3	4
Metode Petani	3	10.5167			
Natural	3		12.3167		
Semi Basah	3			12.4767	
Basah	3				12.8667
Sig.		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 8. Hasil Analisis Sidik Ragam (ANOVA) Kafein

ANOVA

Kafein

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.059	3	.020	395.111	.000
Within Groups	.000	8	.000		
Total	.060	11			

Kafein

Duncan^a

Perlakuan	N	Subset for alpha = 0.05			
		1	2	3	4
Metode Petani	3	1.7900			
Basah	3		1.8233		
Semi Basah	3			1.9133	
Natural	3				1.9667
Sig.		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 9. Hasil Analisis Sidik Ragam (ANOVA) Asam Klorogenat

ANOVA

Asam_Klorogenat

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.530	3	.177	5304.250	.000
Within Groups	.000	8	.000		
Total	.531	11			

Asam_Klorogenat

Duncan^a

Perlakuan	N	Subset for alpha = 0.05			
		1	2	3	4
Metode Petani	3	.80333			
Basah	3		1.24333		
Semi Basah	3			1.28667	
Natural	3				1.32333
Sig.		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 10. Hasil Analisis Sidik Ragam (ANOVA) Total Fenol ANOVA

Total_Fenol

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	162.285	3	54.095	8.003	.009
Within Groups	54.072	8	6.759		
Total	216.357	11			

Total_Fenol

Duncan^a

Perlakuan	N	Subset for alpha = 0.05		
		1	2	3
Metode Petani	3	126.00133		
Natural	3	129.38767	129.38767	
Semi Basah	3		133.77700	133.77700
Basah	3			135.34300
Sig.		.149	.072	.482

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

Lampiran 11. Hasil Analisis Sidik Ragam (ANOVA) Total Flavonoid ANOVA

Total_Flavonoid

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	34.084	3	11.361	11361382.750	.000
Within Groups	.000	8	.000		
Total	34.084	11			

Total_Flavonoid

Duncan^a

Perlakuan	N	Subset for alpha = 0.05			
		1	2	3	4
Metode Petani	3	34.33600			
Basah	3		37.26500		
Semi Basah	3			38.18500	
Natural	3				38.68700
Sig.		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 12. Hasil Analisis Sidik Ragam (ANOVA) Total Padatan Terlarut ANOVA

Total_Padatan_Terlarut

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	11.333	3	3.778	11.333	.003
Within Groups	2.667	8	.333		
Total	14.000	11			

Total_Padatan_Terlarut

Duncan^a

Perlakuan	N	Subset for alpha = 0.05	
		1	2
Semi Basah	3	15.33333	
Metode Petani	3	15.33333	
Basah	3	15.66667	
Natural	3		17.66667
Sig.		.517	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

Lampiran 13. Hasil Analisis Sidik Ragam (ANOVA) Gula Reduksi

ANOVA

Gula_Reduksi

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	39.000	3	13.000	13.000	.002

Within Groups	8.000	8	1.000		
Total	47.000	11			

Gula_Reduksi

Duncan^a

Perlakuan	N	Subset for alpha = 0.05		
		1	2	3
Metode Petani	3	13.0000		
Basah	3		15.0000	
Semi Basah	3		16.0000	
Natural	3			18.0000
Sig.		1.000	.256	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 3.000.

Lampiran 14. Daftar Nama, Umur, dan Pendidikan Petani Pada Kopi Desa Lembang Mesakada

No	Nama	J.K	Umur	Pendidikan Akhir
1	Sulle	L	54	Tamat SD/Sederajat
2	Solon	P	60	Tamat SD/Sederajat
3	Kuala	L	52	SLTP/Sederajat
4	Tonglo	P	42	Tamat SD/Sederajat
5	Tandi	P	48	Tamat SD/Sederajat
6	Yohanis Kadang	L	51	Diploma IV/Strata 1
7	Rewa	P	47	Tamat SD/Sederajat
8	Kate	L	31	SLTP/Sederajat
9	Patola	P	45	Tamat SD/Sederajat
10	Titus Ninong	L	51	Diploma IV/Strata 1

Lampiran 15. Kuesioner Pengetahuan dan Keterampilan Petani dalam Pengolahan Kopi dengan Cara Benar

No.	Pertanyaan	YA	TIDAK
A. Pengetahuan			
1	Apakah Bapak mengetahui cara memetik kopi dengan cara benar ?		√
2	Apakah waktu dan jumlah produksi berpengaruh terhadap metode yang Bapak lakukan ?		√
3	Apakah Bapak mengetahui tentang mutu kopi Robusta		√
4	Apakah Bapak mengetahui tentang harga kopi Robusta dengan mutu yang benar ?		√
5	Apakah Bapak mengetahui pengaruh pengolahan yang salah terhadap mutu kopi ?	√	
6	Apakah Bapak menjual kopi di tengkulak ?	√	
B. Keterampilan			

7	Apakah Bapak melakukan pemetikan kopi dengan cara teliti dan petik merah		√
8	Apakah Bapak melakukan sortasi dalam proses pengolahan kopi ?		√
9	Apakah Bapak melakukan penentuan harga saat melakukan penjualan ?		√
10	Apakah Bapak melakukan pengeringan dengan para-para ?		√

Lampiran 16. Dokumentasi Kegiatan

1. Pemetikan Kopi Cherry Merah



2. Pemetikan Metode Petani (Pelangi)



3. Perhitungan Densitas Berdasarkan Warna





4. Sampel Untuk Pengujian Warna



5. Pengolahan Natural (Penjemuran Gelondong diatas Para-Para



6. Penjemuran Metode Petani (Penjemuran setelah dilakukan Hulling dan Kontak Dengan Tanah



7. Pengolahan Semi Basah



8. Pengolahan Basah



9. Penghalusan Green bean



10. Penimbangan Sampel



11. Preparasi Sampel



12. Pengujian Total Padatan Terlarut



13. Pengujian Mutu dengan Metode Spektrofotometri

