

REFERENCES

- Aliaño-González, M. J., Ferreiro-González, M., Espada-Bellido, E., Palma, M., & Barbero, G. F. (2019). A screening method based on Visible-NIR spectroscopy for the identification and quantification of different adulterants in high-quality honey. *Talanta*, 203, 235–241. <https://doi.org/10.1016/j.talanta.2019.05.067>
- Al-Kubati, A. (2022). *Kopi Luwak Coffee*. <https://doi.org/10.13140/RG.2.2.11002.16320>
- Alloghani, M., Al-Jumeily, D., Mustafina, J., Hussain, A., & Aljaaf, A. J. (2019). Supervised and Unsupervised Learning for Data Science. *Systematic Review on Supervised and Unsupervised Machine Learning*.
- Alpaydin, E. (2014). *Introduction to Machine Learning*. MIT Press.
- Araújo, C. da S., Macedo, L. L., Vimercati, W. C., Ferreira, A., Prezotti, L. C., & Saraiva, S. H. (2020). Determination of pH and acidity in green coffee using near-infrared spectroscopy and multivariate regression. *Journal of the Science of Food and Agriculture*, 100(6), 2488–2493. <https://doi.org/10.1002/jsfa.10270>
- Azlinah, M. W. B., Bee, M., & Yap, W. (2020). *Supervised and Unsupervised Learning for Data Science Unsupervised and Semi-Supervised Learning Series Editor: M. Emre Celebi*. <http://www.springer.com/series/15892>
- Baqueta, M. R., Alves, E. A., Valderrama, P., & Pallone, J. A. L. (2023). Brazilian Canephora coffee evaluation using NIR spectroscopy and discriminant chemometric techniques. *Journal of Food Composition and Analysis*, 116. <https://doi.org/10.1016/j.jfca.2022.105065>
- Barea-Sepúlveda, M., Espada-Bellido, E., Ferreiro-González, M., Bouziane, H., López-Castillo, J. G., Palma, M., & F. Barbero, G. (2022). Toxic elements and trace elements in Macrolepiota procera mushrooms from southern Spain and northern Morocco. *Journal of Food Composition and Analysis*, 108. <https://doi.org/10.1016/j.jfca.2022.104419>
- Barea-Sepúlveda, M., Ferreiro-González, M., Calle, J. L. P., Barbero, G. F., Ayuso, J., & Palma, M. (2022). Comparison of different processing approaches by SVM and RF on HS-MS eNose and NIR Spectrometry data for the discrimination of gasoline samples. *Microchemical Journal*, 172. <https://doi.org/10.1016/j.microc.2021.106893>
- Belgiu, M., & Drăguț, L. (2016). Random forest in remote sensing: A review of applications and future directions. *ISPRS Journal of Photogrammetry and Remote Sensing*, 114, 24–31. <https://doi.org/10.1016/j.isprsjprs.2016.01.011>
- Budi, A., Sari, T., Ismayadi, C., Wahyudi, T., & Sulihkanti, A. (2012). Naskah diterima (received) 13 Juli 2011, disetujui (accepted) 15 Agustus 2012. 1) Pusat Penelitian Kopi dan Kakao Indonesia. 2) Biologi, School of Life Science and Technology, Bandung Institute of Technology. In *Pelita Perkebunan* (Vol. 28, Issue 2).
- Buratti, S., Sinelli, N., Bertone, E., Venturello, A., Casiraghi, E., & Geobaldo, F. (2015). Discrimination between washed Arabica, natural Arabica and Robusta coffees by using near infrared spectroscopy, electronic nose and electronic tongue analysis. *Journal of the Science of Food and Agriculture*, 95(11), 2192–2200. <https://doi.org/10.1002/jsfa.6933>
- Calle, J. L. P., Ferreiro-González, M., Ruiz-Rodríguez, A., Barbero, G. F., Álvarez, J., Palma, M., & Ayuso, J. (2021). A methodology based on ft-ir data combined with random forest model to generate spectralprints for the characterization of high-quality vinegars. *Foods*, 10(6). <https://doi.org/10.3390/foods10061411>



UNIVERSITAS
GADJAH MADA

VARIOUS SAMPLE TREATMENTS TO IMPROVE THE DISCRIMINATION BETWEEN WILD AND FEEDING CIVET COFFEE
USING NEAR-INFRARED SPECTROSCOPY IN CONJUNCTION WITH CHEMOMETRIC
Deyla Prajna Anindita Heru, Dr. Widiasuti Setyaningsih, S.T.P., M.Sc.; Prof. Miguel Palma
Universitas Gadjah Mada, 2023 | Diunduh dari <http://etd.repository.ugm.ac.id/>

- Catelani, T. A., Páscoa, R. N. M. J., Santos, J. R., Pezza, L., Pezza, H. R., Lima, J. L. F. C., & Lopes, J. A. (2017). A Non-invasive Real-Time Methodology for the Quantification of Antioxidant Properties in Coffee During the Roasting Process Based on Near-Infrared Spectroscopy. *Food and Bioprocess Technology*, 10(4), 630–638. <https://doi.org/10.1007/s11947-016-1843-6>
- Chan, S., & Garcia, E. (2011). *Comparative Physicochemical Analyses of Regular and Civet Coffee*.
- Ciurczak, E. W., Igne, B., Workman, J., & Burns, D. A. (2021). *Handbook of Near-Infrared Analysis* (E. W. Ciurczak, B. Igne, Jr. Workman, & D. A. Burns, Eds.). CRC Press. <https://doi.org/10.1201/b22513>
- Cone, E. J., Presley, L., Lehrer, M., Seiter, W., Smith, M., Kardos, K. W., Fritch, D., Salamone, S., Sam Niedbala, R., & Niedbala, S. (2002). Oral Fluid Testing for Drugs of Abuse: Positive Prevalence Rates by Intercepff Immunoassay Screening and GC-MS-MS Confirmation and Suggested Cutoff Concentrations. In *Journal of Analytical Toxicology* (Vol. 26).
- Couto, C. de C., Freitas-Silva, O., Oliveira, E. M. M., Sousa, C., & Casal, S. (2022). Near-infrared spectroscopy applied to the detection of multiple adulterants in roasted and ground arabica coffee. *Foods*, 11(1). <https://doi.org/10.3390/foods11010061>
- Dankowska, A., & Kowalewski, W. (2019). Tea types classification with data fusion of UV–Vis, synchronous fluorescence and NIR spectroscopies and chemometric analysis. *Spectrochimica Acta - Part A: Molecular and Biomolecular Spectroscopy*, 211, 195–202. <https://doi.org/10.1016/j.saa.2018.11.063>
- Devos, O., Ruckebusch, C., Durand, A., Duponchel, L., & Huvenne, J. P. (2009). Support vector machines (SVM) in near infrared (NIR) spectroscopy: Focus on parameters optimization and model interpretation. *Chemometrics and Intelligent Laboratory Systems*, 96(1), 27–33. <https://doi.org/10.1016/j.chemolab.2008.11.005>
- Dougherty, J., Kohavi, R., & Sahami, M. (1995). *Supervised and Unsupervised Discretization of Continuous Features*. Morgan Kaufmann Publishers.
- Drudi, S. (2021). *UNSUPERVISED LEARNING-A SYSTEMATIC LITERATURE REVIEW A PREPRINT*.
- Dryden, G. McL. (2003). *Near Infrared Reflectance Spectroscopy: Applications in Deer Nutrition*. <http://www.rirdc.gov.au>
- Fawagreh, K., Gaber, M. M., & Elyan, E. (2014). Random forests: From early developments to recent advancements. *Systems Science and Control Engineering*, 2(1), 602–609. <https://doi.org/10.1080/21642583.2014.956265>
- Ferreiro-González, M., Barbero, G., Palma, M., Ayuso, J., Álvarez, J., & Barroso, C. (2017). Characterization and Differentiation of Petroleum-Derived Products by E-Nose Fingerprints. *Sensors*, 17(11), 2544. <https://doi.org/10.3390/s17112544>
- Ferreiro-González, M., Espada-Bellido, E., Guillén-Cueto, L., Palma, M., Barroso, C. G., & Barbero, G. F. (2018). Rapid quantification of honey adulteration by visible-near infrared spectroscopy combined with chemometrics. *Talanta*, 188, 288–292. <https://doi.org/10.1016/j.talanta.2018.05.095>
- Forchetti, D. A. P., & Poppi, R. J. (2020). Detection and Quantification of Adulterants in Roasted and Ground Coffee by NIR Hyperspectral Imaging and Multivariate Curve Resolution. *Food Analytical Methods*, 13(1), 44–49. <https://doi.org/10.1007/s12161-019-01502-x>
- Fujimoto, M. S., Suvorov, A., Jensen, N. O., Clement, M. J., & Bybee, S. M. (2016). Detecting false positive sequence homology: A machine learning approach. *BMC Bioinformatics*, 17(1). <https://doi.org/10.1186/s12859-016-0955-3>
- Giraudo, A., Grassi, S., Savorani, F., Gavoci, G., Casiraghi, E., & Geobaldo, F. (2019). Determination of the geographical origin of green coffee beans using NIR spectroscopy and multivariate data analysis. *Food Control*, 99, 137–145. <https://doi.org/10.1016/j.foodcont.2018.12.033>



UNIVERSITAS
GADJAH MADA

VARIOUS SAMPLE TREATMENTS TO IMPROVE THE DISCRIMINATION BETWEEN WILD AND FEEDING CIVET COFFEE
USING NEAR-INFRARED SPECTROSCOPY IN CONJUNCTION WITH CHEMOMETRIC
Deyla Prajna Anindita Heru, Dr. Widiasuti Setyaningsih, S.T.P., M.Sc.; Prof. Miguel Palma
Universitas Gadjah Mada, 2023 | Diunduh dari <http://etd.repository.ugm.ac.id/>

- Hofmann, T. (2001). *Unsupervised Learning by Probabilistic Latent Semantic Analysis* (Vol. 42).
- Huang, F., Song, H., Guo, L., Guang, P., Yang, X., Li, L., Zhao, H., & Yang, M. (2020). Detection of adulteration in Chinese honey using NIR and ATR-FTIR spectral data fusion. *Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy*, 235, 118297. <https://doi.org/10.1016/j.saa.2020.118297>
- Ifmalinda, I., Setiasih, I. S., Muhaemin, M., & Nurjanah, S. (2019). Chemical Characteristics Comparison of Palm Civet Coffee (Kopi Luwak) and Arabica Coffee Beans. *Journal of Applied Agricultural Science and Technology*, 3(2), 280–288. <https://doi.org/10.32530/jaast.v3i2.110>
- Jolliffe, I. T., & Cadima, J. (2016). Principal component analysis: A review and recent developments. In *Philosophical Transactions of the Royal Society A: Mathematical, Physical and Engineering Sciences* (Vol. 374, Issue 2065). Royal Society of London. <https://doi.org/10.1098/rsta.2015.0202>
- Jumhawan, U., Putri, S. P., Yusianto, Bamba, T., & Fukusaki, E. (2015). Application of gas chromatography/flame ionization detector-based metabolite fingerprinting for authentication of Asian palm civet coffee (Kopi Luwak). *Journal of Bioscience and Bioengineering*, 120(5), 555–561. <https://doi.org/10.1016/j.jbiosc.2015.03.005>
- Karlinasari, L., Sabed, M., Wistara, N. J., Aris Purwanto, Y., Wijayanto, H., Kehutanan, F., Pertanian Bogor, I., Tanjungpura, U., Barat, K., Teknologi Pertanian, F., & Matematika dan Ilmu Pengetahuan Alam, F. (2012). KARAKTERISTIK SPEKTRA ABSORBANSI NIR (NEAR INFRA RED) SPEKTROSKOPI KAYU Acacia mangium WILLD. PADA 3 UMUR BERBEDA. In *Jurnal Ilmu Kehutanan* (Vol. 1).
- Karypis, G., Han, E.-H., & Kumar, V. (1999). Chameleon: hierarchical clustering using dynamic modeling. *Computer*, 32(8), 68–75. <https://doi.org/10.1109/2.781637>
- Kotsiantis, S. B. (2007). Supervised machine learning: A review of classification techniques. In *Informatica* (Vol. 31, pp. 249–268).
- Kovacevic, A., Dehghan, A., Filannino, M., Keane, J. A., & Nenadic, G. (2013). Combining rules and machine learning for extraction of temporal expressions and events from clinical narratives. *Journal of the American Medical Informatics Association*, 859–866.
- Lachenmeier, D. W., & Schwarz, S. (2021). Digested civet coffee beans (Kopi luwak)—an unfortunate trend in specialty coffee caused by mislabeling of coffeea liberica? *Foods*, 10(6). <https://doi.org/10.3390/foods10061329>
- Libbrecht, M. W., & Noble, W. S. (2015). Machine learning applications in genetics and genomics. In *Nature Reviews Genetics* (Vol. 16, Issue 6, pp. 321–332). Nature Publishing Group. <https://doi.org/10.1038/nrg3920>
- Mani, S., Chen, Y., Li, X., Arlinghaus, L., Chakravarthy, A. B., Abramson, V., Bhave, S. R., Levy, M. A., Xu, H., & Yankeelov, T. E. (2013). Machine learning for predicting the response of breast cancer to neoadjuvant chemotherapy. *Journal of the American Medical Informatics Association*, 20(4), 688–695. <https://doi.org/10.1136/amiajnl-2012-001332>
- Manuel, M. N. B., da Silva, A. C., Lopes, G. S., & Ribeiro, L. P. D. (2022). One-class classification of special agroforestry Brazilian coffee using NIR spectrometry and chemometric tools. *Food Chemistry*, 366. <https://doi.org/10.1016/j.foodchem.2021.130480>
- Marshland, S. (2015). *Machine learning: An algorithm perspective*. Boca Raton, FL: CRCPress.
- Mechram, S., Rahadi, B., Kusuma, Z., & Soemarno. (2021, December 7). *Nirs Technology (Near Infrared Reflectance Spectroscopy) for Detecting Soil Fertility Case Study in Aceh Province: Review*. <https://doi.org/10.11594/nstp.2021.1511>



UNIVERSITAS
GADJAH MADA

VARIOUS SAMPLE TREATMENTS TO IMPROVE THE DISCRIMINATION BETWEEN WILD AND FEEDING CIVET COFFEE
USING NEAR-INFRARED SPECTROSCOPY IN CONJUNCTION WITH CHEMOMETRIC
Deyla Prajna Anindita Heru, Dr. Widiasuti Setyaningsih, S.T.P., M.Sc.; Prof. Miguel Palma
Universitas Gadjah Mada, 2023 | Diunduh dari <http://etd.repository.ugm.ac.id/>

- Mees, C., Souard, F., Delporte, C., Deconinck, E., Stoffelen, P., Stévigny, C., Kauffmann, J. M., & De Braekeleer, K. (2018). Identification of coffee leaves using FT-NIR spectroscopy and SIMCA. *Talanta*, 177, 4–11. <https://doi.org/10.1016/j.talanta.2017.09.056>
- Miller, J. N., & Miller, J. C. (2005). *Statistics and Chemometric for Analytical Chemistry* (5th Edition). Pearson Education Limited.
- Muzaifa, M., Hasni, D., Febriani, Patria, A., & Abubakar, A. (2020). Chemical composition of green and roasted coffee bean of Gayo arabica civet coffee (kopi luwak). *IOP Conference Series: Earth and Environmental Science*, 425(1), 012001. <https://doi.org/10.1088/1755-1315/425/1/012001>
- Muzaifa, M., Hasni, D., Rahmi, F., & Syarifudin. (2019). What is kopi luwak? A literature review on production, quality and problems. *IOP Conference Series: Earth and Environmental Science*, 365(1). <https://doi.org/10.1088/1755-1315/365/1/012041>
- Muzaifa, M., Hasni, D., Yunita, D., Febriani, Patria, A., & Abubakar, A. (2019). Amino acid and sensory profile of Kopi Luwak (Civet Coffee). *IOP Conference Series: Materials Science and Engineering*, 523(1). <https://doi.org/10.1088/1757-899X/523/1/012028>
- Nóbrega, R. O., da Silva, S. F., Fernandes, D. D. S., Lyra, W. S., de Araújo, T. K. L., Diniz, P. H. G. D., & Araújo, M. C. U. (2023). Classification of instant coffees based on caffeine content and roasting degree using NIR spectrometry and multivariate analysis. *Microchemical Journal*, 190. <https://doi.org/10.1016/j.microc.2023.108624>
- Oblitas-Cruz, J., Cieza-Rimarachin, Y., & Castro-Silupu, W. (2021). Determination of the geographical origin of two coffee varieties by NIR spectroscopy. *Proceedings of the LACCEI International Multi-Conference for Engineering, Education and Technology, 2021-July*. <https://doi.org/10.18687/LACCEI2021.1.1.111>
- Okubo, N., & Kurata, Y. (2019). Nondestructive classification analysis of green coffee beans by using near-infrared spectroscopy. *Foods*, 8(2). <https://doi.org/10.3390/foods8020082>
- Ongo, E. A., Montevercchi, 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>
- Panggabean, E. (2011). *Buku Pintar Kopi*. Agro Media Pustaka.
- prakash, Mr. S. O., & S, G. (2018). Principal Component Analysis - A Survey. *IJARCCE*, 7(8), 63–66. <https://doi.org/10.17148/ijarcce.2018.7814>
- Qiu, S., Wang, J., Tang, C., & Du, D. (2015). Comparison of ELM, RF, and SVM on E-nose and E-tongue to trace the quality status of mandarin (*Citrus unshiu* Marc.). *Journal of Food Engineering*, 166, 193–203. <https://doi.org/10.1016/j.jfoodeng.2015.06.007>
- Ramos-Henríquez, J. M., Gutiérrez-Taño, D., & Díaz-Armas, R. J. (2021). Value proposition operationalization in peer-to-peer platforms using machine learning. *Tourism Management*, 84. <https://doi.org/10.1016/j.tourman.2021.104288>
- Rani¹, Y., & Rohil, H. (2013). A Study of Hierarchical Clustering Algorithm. In *International Journal of Information and Computation Technology* (Vol. 3, Issue 11). <http://www.irphouse.com/ijict.htm>
- Renai, L., Ancillotti, C., Ułaszewska, M., Garcia-Aloy, M., Mattivi, F., Bartoletti, R., & Del Bubba, M. (2022). Comparison of chemometric strategies for potential exposure marker discovery and false-positive reduction in untargeted metabolomics: application to the serum analysis by LC-HRMS after intake of Vaccinium fruit supplements. *Analytical and Bioanalytical Chemistry*, 414(5), 1841–1855. <https://doi.org/10.1007/s00216-021-03815-5>



UNIVERSITAS
GADJAH MADA

VARIOUS SAMPLE TREATMENTS TO IMPROVE THE DISCRIMINATION BETWEEN WILD AND FEEDING CIVET COFFEE
USING NEAR-INFRARED SPECTROSCOPY IN CONJUNCTION WITH CHEMOMETRIC
Deyla Prajna Anindita Heru, Dr. Widiasuti Setyaningsih, S.T.P., M.Sc.; Prof. Miguel Palma
Universitas Gadjah Mada, 2023 | Diunduh dari <http://etd.repository.ugm.ac.id/>

- Ribeiro, J. S., Ferreira, M. M. C., & Salva, T. J. G. (2011). Chemometric models for the quantitative descriptive sensory analysis of Arabica coffee beverages using near infrared spectroscopy. *Talanta*, 83(5), 1352–1358. <https://doi.org/10.1016/j.talanta.2010.11.001>
- Ribeiro, J. S., Salva, T. de J. G., & Silvarolla, M. B. (2021). Prediction of a wide range of compounds concentration in raw coffee beans using NIRS, PLS and variable selection. *Food Control*, 125. <https://doi.org/10.1016/j.foodcont.2021.107967>
- Roggo, Y., Duponchel, L., & Huvenne, J.-P. (2003). Comparison of supervised pattern recognition methods with McNemar's statistical test Application to qualitative analysis of sugar beet by near-infrared spectroscopy. In *Analytica Chimica Acta* (Vol. 477).
- Rokach, L., & Maimon, O. (2005). Clustering Methods. In *Data Mining and Knowledge Discovery Handbook* (pp. 321–352). Springer-Verlag. https://doi.org/10.1007/0-387-25465-X_15
- Rudnitskaya, A., Kirsanov, D., Legin, A., Beullens, K., Lammertyn, J., Nicolaï, B. M., & Irudayaraj, J. (2006). Analysis of apples varieties – comparison of electronic tongue with different analytical techniques. *Sensors and Actuators B: Chemical*, 116(1–2), 23–28. <https://doi.org/10.1016/j.snb.2005.11.069>
- Sandercock, P. M. L., & Du Pasquier, E. (2003). Chemical fingerprinting of unevaporated automotive gasoline samples. *Forensic Science International*, 134(1), 1–10. [https://doi.org/10.1016/S0379-0738\(03\)00081-1](https://doi.org/10.1016/S0379-0738(03)00081-1)
- Scott, I. M., Lin, W., Liakata, M., Wood, J. E., Vermeer, C. P., Allaway, D., Ward, J. L., Draper, J., Beale, M. H., Corol, D. I., Baker, J. M., & King, R. D. (2013). Merits of random forests emerge in evaluation of chemometric classifiers by external validation. *Analytica Chimica Acta*, 801, 22–33. <https://doi.org/10.1016/j.aca.2013.09.027>
- Setyaningsih, W., Putro, A. W., Fathimah, R. N., Kurnia, K. A., Darmawan, N., Yulianto, B., Jiwanti, P. K., Carrera, C. A., & Palma, M. (2022). A microwave-based extraction method for the determination of sugar and polyols: Application to the characterization of regular and peaberry coffees. *Arabian Journal of Chemistry*, 15(3). <https://doi.org/10.1016/j.arabjc.2021.103660>
- Sigman, M. E., & Williams, M. R. (2016). Assessing evidentiary value in fire debris analysis by chemometric and likelihood ratio approaches. *Forensic Science International*, 264, 113–121. <https://doi.org/10.1016/j.forsciint.2016.03.051>
- Suhandy, D., Kusumiyati, & Yulia, M. (2022). Discrimination between arabica and robusta coffees using NIR-integrating sphere spectroscopy coupled with hierarchical clustering analysis. *IOP Conference Series: Earth and Environmental Science*, 1038(1). <https://doi.org/10.1088/1755-1315/1038/1/012034>
- Suhandy, D., & Yulia, M. (2017). The Use of Partial Least Square Regression and Spectral Data in UV-Visible Region for Quantification of Adulteration in Indonesian Palm Civet Coffee. *International Journal of Food Science*, 2017, 1–7. <https://doi.org/10.1155/2017/6274178>
- Suhandy, D., & Yulia, M. (2021). Authentication of Six Indonesian Ground Roasted Specialty Coffees According to Variety and Geographical Origin using NIR Spectroscopy with Integrating Sphere. *IOP Conference Series: Earth and Environmental Science*, 830(1). <https://doi.org/10.1088/1755-1315/830/1/012065>
- Tugnolo, A., Beghi, R., Giovenzana, V., & Guidetti, R. (2019). Characterization of green, roasted beans, and ground coffee using near infrared spectroscopy: A comparison of two devices. *Journal of Near Infrared Spectroscopy*, 27(1), 93–104. <https://doi.org/10.1177/0967033519825665>
- Varmuza, K. (2002). Chemometrics: Multivariate View on Chemical Problems. In *Encyclopedia of Computational Chemistry*. John Wiley & Sons, Ltd. <https://doi.org/10.1002/0470845015.cca018>



UNIVERSITAS
GADJAH MADA

VARIOUS SAMPLE TREATMENTS TO IMPROVE THE DISCRIMINATION BETWEEN WILD AND FEEDING CIVET COFFEE
USING NEAR-INFRARED SPECTROSCOPY IN CONJUNCTION WITH CHEMOMETRIC
Deyla Prajna Anindita Heru, Dr. Widiasuti Setyaningsih, S.T.P., M.Sc.; Prof. Miguel Palma
Universitas Gadjah Mada, 2023 | Diunduh dari <http://etd.repository.ugm.ac.id/>

- Vázquez-Espinosa, M., Fayos, O., González-De-Peredo, A. V., Espada-Bellido, E., Ferreiro-González, M., Palma, M., Garcés-Claver, A., & Barbero, G. F. (2020). Changes in capsiate content in four chili pepper genotypes (*capsicum* spp.) at different ripening stages. *Agronomy*, 10(9). <https://doi.org/10.3390/agronomy10091337>
- Wakhid, S., Sarno, R., Sabilla, S. I., & Maghfira, D. B. (2020). Detection and classification of indonesian civet and non-civet coffee based on statistical analysis comparison using E-Nose. *International Journal of Intelligent Engineering and Systems*, 13(4), 56–65. <https://doi.org/10.22266/IJIES2020.0831.06>
- Waluyo, S., Handayani, F. N., Suhandy, D., Rahmawati, W., Sugianti, C., & Yulia, M. (2017). ANALISIS SPEKTRUM UV-VIS UNTUK MENGUJI KEMURNIAN KOPI LUWAK UV-VIS SPECTRUM ANALYSIS TO DETERMINE THE AUTHENTICITY OF CIVET COFFEE. 73–80.
- Waluyo, S., Novi Handayani, F., Suhandy, D., Rahmawati, W., Sugianti, C., Yulia, M., Jurusan Teknik Pertanian, D., Pertanian, F., Lampung, U., Jurusan Teknik Pertanian, M., Jurusan Teknologi Pertanian, D., & Negeri Lampung, P. (2017). ANALISIS SPEKTRUM UV-VIS UNTUK MENGUJI KEMURNIAN KOPI LUWAK UV-VIS SPECTRUM ANALYSIS TO DETERMINE THE AUTHENTICITY OF CIVET COFFEE. In *Jurnal Teknik Pertanian Lampung* (Vol. 6, Issue 2).
- Wu, X.-M., Zhang, Q.-Z., & Wang, Y.-Z. (2018). Traceability of wild *Paris polyphylla* Smith var. *yunnanensis* based on data fusion strategy of FT-MIR and UV-Vis combined with SVM and random forest. *Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy*, 205, 479–488. <https://doi.org/10.1016/j.saa.2018.07.067>
- Xu, Y., Zomer, S., & Brereton, R. G. (2006). Support Vector Machines: A Recent Method for Classification in Chemometrics. *Critical Reviews in Analytical Chemistry*, 36(3–4), 177–188. <https://doi.org/10.1080/10408340600969486>
- Yulia, M., & Suhandy, D. (2017). Indonesian palm civet coffee discrimination using UV-visible spectroscopy and several chemometrics methods. *Journal of Physics: Conference Series*, 835(1). <https://doi.org/10.1088/1742-6596/835/1/012010>
- Yusianto, Mawardi, S., Ismayadi, C., & Sulistitowati. (2010). *Karakteristik Fisik dan Citarasa Kopi Luwak*. 285–295.