

DAFTAR PUSTAKA

- Abulais, D. M., & Patiung, O. R. (2024). Penentuan Kadar Kafein dari Teh Seduhan Cascara Menggunakan Metode Spektrofotometri UV-Vis. *Avogadro Jurnal Kimia*, 8(1), 8–12.
- Agelet, L. E., & Hurburgh, C. R. (2010). *A Tutorial on Near Infrared Spectroscopy and Its Calibration*. *Critical Reviews in Analytical Chemistry*, 40(4), 246–260.
<https://doi.org/10.1080/10408347.2010.515468>
- Ahriyasna, R., Primal, D., & Nurhamida, N. (2023). Flavonoid dalam Rebusan Kawa Daun (*Coffea canephora*) Memperbaiki Kadar Glukosa Darah dan Regenerasi Sel Beta Pankreas Tikus Diinduksi Diabetes. *Jurnal Kesehatan Perintis*, 10(1), 60–67.
<https://jurnal.upertis.ac.id/index.php/JKP/article/view/857/398>
- Almizan & Fadhil, R. Z. (2020). Pemilihan Teknik Akuisisi Spektrum NIRS untuk Membedakan Kopi Arabika dan Kopi Robusta Gayo dengan Metode PCA (*Principal Component Analysis*). *Jurnal Ilmiah Mahasiswa Pertanian*, Vol 5(1), 371–380.
- Amilia, W., Rifa'i, M. A. F., Choirun, M., Rusdianto, A. S., & Mahardika, N. S. (2023). *Characteristics of Argopuro Robusta Coffee with Processing Methods Honey Process and Pineapple Addition*. *JOFE: Journal of Food Engineering*, 2(3), 140–153.
<https://doi.org/10.25047/jofe.v2i3.3739>
- Andasuryani, A., & Ifmalinda. (2024). *Rapid Prediction of Moisture and Ash Content in Sungkai Leaves Herbal Tea (Peronema canescens Jack.) using NIR Spectroscopy*. *Jurnal Keteknikan Pertanian*, 12(3), 301–313.
<https://doi.org/10.19028/jtep.012.3.301-313>

- Andasuryani, Munawar, Arip. A., Kusumiyati, Adrizal, & Yusmanizar. (2024). *Non-Invasive NIR Spectroscopy for Precise Water Content Determination in Sumatran Coffee Beans. International Journal of Design and Nature and Ecodynamics*, 19(5), 1785–1791.
- Andasuryani, Purwanto, Y. A., Budiastara, I. W., & Syamsu, K. (2014). Prediksi Kandungan Katekin Gambir (*uncaria gambir Roxb.*) dengan Spektroskopi NIR. *Jurnal Teknologi Industri Pertanian*, 24(1), 43–52.
- Araújo, C. da S., Macedo, L.L., Vimercati, W. C., & Saraiva, S. H. (2021). *Spectroscopy Technique Applied to Estimate Sensory Parameters and Quantification of Total Phenolic Compounds in Coffee.*
- Ashihara, H., Sano, H., & Crozier, A. (2008). *Caffeine and Related Purine Alkaloids: Biosynthesis, Catabolism, Function and Genetic Engineering. Phytochemistry*, 69(4), 841–856.
<https://doi.org/10.1016/j.phytochem.2007.10.029>
- Budiastara, I. W., Sutrisno, M., Widyotomo, S., & Ayu, P. C. (2020). *Determination of Trigonelline and Chlorogenic Acid (CGA) Concentration in Intact Coffee Beans by NIR Spectroscopy. Agricultural Engineering International: CIGR Journal*, 22(1), 162–168.
- Burns, Donald A; Ciurczak, E. W. (2008). *Handbook of Near-Infrared Analysis Third Edition.*
- Cen, H., & He, Y. (2007). *Theory and Application of Near Infrared Reflectance Spectroscopy in Determination of Food Quality. Trends in Food Science and Technology*, 18(2), 72–83.
<https://doi.org/10.1016/j.tifs.2006.09.003>
- Chairunnisa & Putri, R. E. (2022). Rancang Bangun Alat Pembuat Minuman Kawa Daun Otomatis Berbasis Mikrokontroler. *Chipset*, 3(2), 120–130.
<https://doi.org/10.25077/chipset.3.02.120-130.2022>

- Cozmuta, M. L. (2025). *The Application of Multiple Linear Regression Methods to FTIR Spectra of Fingernails for Predicting Gender and Age of Human Subjects*. *Heliyon*, 11-e42815.
<https://doi.org/10.1016/j.heliyon.2025.e42815>
- Damela, P. (2021). *Pendugaan Kandungan Gizi Dedak Padi Menggunakan NIRS*. Skripsi, Universitas Andalas.
- Daneswara, K. R., & Trisdayanti, N. P. E. (2024). Uji Organoleptik Permen Jelly Berbahan Dasar Air Kawa Daun. *Indonesian Journal of Applied and Industrial Sciences (ESA)* 3(6), 893–904.
- Everette, J. D., Bryant, Q. M., Green, A. M., Abbey, Y. A., Wangila, G. W., & Walker, R. B. (2010). *Thorough Study of Reactivity of Various Compound Classes Toward the Folin-Ciocalteu Reagent*. *Journal of Agricultural and Food Chemistry*, 58(14), 8139–8144.
<https://doi.org/10.1021/jf1005935>
- Firdaus, J., Ahmad, U., Budiastra, I. W., & Subrata, I. D. M. (2024). *Estimating Macronutrient Content of Paddy Soil Based on Near-Infrared Spectroscopy Technology Using Multiple Linear Regression*. *Advances in Technology Innovation*, 9(1), 50–64.
<https://doi.org/10.46604/aiti.2023.12683>
- Gad, H. A., El-Ahmady, S. H., Abou-Shoer, M. I., & Al-Azizi, M. M. (2013). *A Modern Approach to The Authentication and Quality Assessment of Thyme Using UV Spectroscopy and Chemometric Analysis*. *Phytochemical Analysis*, 24(6), 520–526.
<https://doi.org/10.1002/pca.2426>
- Girolamo, D. A., Lippolis, V., Nordkvist, E. V., & Visconti, A. (2009). *Rapid and Non-Invasive Analysis of Deoxynivalenol in Durum and Common Wheat by Fourier-Transform Near Infrared (FT-NIR) Spectroscopy*. *Journal Food Additives and*

Contaminants, 26(6), 907-917.

<https://doi.org/10.1080/02652030902788946>

Herlina, M., Syahfitri, J., Lubis, R., Sulaiman, E., & Nopriyeni, N. (2021). Pelatihan Pembuatan Keripik Daun Kopi di Desa Cugung Lalang Kecamatan Kepahiang Kabupaten Kepahiang. *Jurdimas (Jurnal Pengabdian Kepada Masyarakat)* Royal, 4(2), 141–146.

<https://doi.org/10.33330/jurdimas.v4i2.954>

Kuno, A., & Matsuo, M. (2000). *Non Destructive Speciation of Solid Mixtures by Multivariate Calibration of X-ray Absorption Near-Edge Structure Using Artificial Neural Networks and Partial Least-Squares*. *Analytical Sciences*, 16(6), 597–602.

<https://doi.org/10.2116/analsci.16.597>

Lazuardina, B. A., Farah, D., Purba, W., Rusindiyanto, & Defri, I. (2022). Pemanfaatan Limbah Daun Kopi Sebagai Minuman Kesehatan di Desa Sumberrejo, Jawa Timur. *Jurnal Pengabdian Masyarakat Teknik Mesin (Abdi-Mesin)*, 2(1), 72–80.

<https://doi.org/10.33005/abdi-mesin.v2i1.35>

Lengkey, L. C. E. C., Budiastra, I. W., Seminar, K. B., & Purwoko, B. S. (2020). Model Pendugaan Kandungan Air, Lemak dan Asam Lemak Bebas pada Tiga Provenan Biji Jarak Pagar (*Jatropha curcas L.*) Menggunakan Spektroskopi Inframerah Dekat dengan Metode *Partial Least Squares* (PLS). *Jurnal Penelitian Tanaman Industri*, 19(4), 203.

<https://doi.org/10.21082/jlitri.v19n4.2013.203-211>

Liu, Y., Liu, Y., Chen, Y., Zhang, Y., Shi, T., Wang, J., Hong, Y., Fei, T., & Zhang, Y. (2019). *The Influence of Spectral Pretreatment on The Selection of Representative Calibration Samples for Soil Organic Matter Estimation Using Vis-NIR Reflectance Spectroscopy*. *Remote Sensing*, 11, 450.

<https://doi.org/10.3390/rs11040450>

Mahardani, O. T., & Yuanita, L. (2021). Efek Metode Pengolahan

- dan Penyimpanan terhadap Kadar Senyawa Fenolik dan Aktivitas Antioksidan. *UNESA Journal of Chemistry*, 10(1), 64–78.
- Malvandi, A., Feng, H., & Kamruzzaman, M. (2021). *Application of NIR Spectroscopy and Multivariate Analysis for Non-Destructive Evaluation of Apple Moisture Content During Ultrasonic Drying*. Elsevier, Vol 269, 120733. <https://doi.org/10.1016/j.saa.2021.120733>
- Manley, M. (2014). *Near-Infrared Spectroscopy and Hyperspectral Imaging: Non-Destructive Analysis of Biological Materials*. The Royal Society of Chemistry 43, 8200–8214. <https://doi.org/10.1039/c4cs00062e>
- Mardiantono; Budiastra, I. W. S. (2022). *Prediksi Kandungan Kimia Kopra dengan FT-Nir Spectroscopy Menggunakan PLS*. 10(2), 87–97.
- Mechram, S., Ayu, I. W., & Farni, Y. (2024). *Pretreatment Method Standard Normal Variate (SNV) and Baseline Shift correction (BSC) on the NIRS-based soil spectrum for rapid Prediction of Soil Nitrogen Content*. *IOP Conference Series: Earth and Environmental Science*, 1290(1). <https://doi.org/10.1088/1755-1315/1290/1/012026>
- Mouazen, A. M., Saeys, W., Xing, J., Baerdemaeker, J. De, & Ramon, H. (2005). *Near Infrared Spectroscopy for Agricultural Materials: an Instrument Comparison*. *Near Infrared Spectrosc*, 13, 87–97.
- Munawar, A. A., & Budiastra, I. W. (2009). *Non Destructive Inner Quality Prediction in Intact Mango with Near Infrared Reflectance Spectroscopy*. *Jurnal Keteknikaan Pertanian*, 23(1).
- Nicola, B. M., Beullens, K., Bobelyn, E., Peirs, A., Saeys, W., Theron, K. I., & Lammertyn, J. (2007). *Nondestructive Measurement of Fruit and Vegetable Quality by Means of*

NIR Spectroscopy: A review. Postharvest Biology and Technology 46, 99–118.

<https://doi.org/10.1016/j.postharvbio.2007.06.024>

Nintowati, P. D., Solichatun, & Suratman. (2024). Analisis Fitokimia dan Aktivitas Antioksidan Daun Kopi Robusta (*Coffea canephora*) Berdasarkan Perbedaan Ketinggian Tempat Tumbuh. *Bioscientist : Jurnal Ilmiah Biologi*, 12(2), 2317.

<https://doi.org/10.33394/bioscientist.v12i2.13601>

Novita, R., Kasim, A., Anggraini, T., & Putra, D. P. (2018). Kahwa daun: traditional knowledge of a coffee leaf herbal tea from West Sumatera, Indonesia. *Journal of Ethnic Foods*, 5(4), 286–291.

<https://doi.org/10.1016/j.jef.2018.11.005>

Nurhasanah; Siregar, K., & Zulfahrizal. (2019). Prediksi Kadar Air Beras Menggunakan NIRS dengan Metode PLS dan Pretreatment Standard Normal Variate , Derivative I , Savitzky Golay Smoothing. *Jurnal Ilmiah Mahasiswa Pertanian*, 4(1), 628–637.

Parrini, S., Staglianò, N., Bozzi, R., & Argenti, G. (2022). Can Grassland Chemical Quality be Quantified Using Transform Near Infrared Spectroscopy. *Animals*, 12(1).

<https://doi.org/10.3390/ani12010086>

Pasikatan, M. C., Steele, J. L., Spillman, C. K., & Haque, E. (2001). Near Infrared Reflectance Spectroscopy for Online Particle Size Analysis of Powders and Ground Materials. *Journal of Near Infrared Spectroscopy*, 9(3), 153–164.

<https://doi.org/10.1255/jnirs.303>

Prawira-Atmaja, M. I., Maulana, H., Shabri, Riski, G. P., Fauziah, A., & Harianto, S. (2021). Evaluasi Kesesuaian Mutu Produk Teh dengan Persyaratan SNI. *Jurnal Standarisasi*, 23(1), 43–52.

Pristiana, D. Y., Susanti, S., & Nurwantoro. (2017). Antioksidan dan Kadar Fenol Berbagai Ekstrak Daun Kopi (*Coffea Sp.*):

- Potensi Aplikasi Bahan Alami untuk Fortifikasi Pangan. *Jurnal Aplikasi Teknologi Pangan*, 6(2), 89–92.
<https://doi.org/10.17728/jatp.205>
- Purningsih, V., Budiastara, I. W., Sutrisno, & Widyotomo, S. (2018). *Accuracy of NIRS Method for Prediction of Chemical Content of Bondowoso Green Coffee Powder Using Kubelka-Munk Model*. *Jurnal Keteknik Pertanian*, 6(3), 271–278.
<https://doi.org/10.19028/jtep.06.3.271-278>
- Rahayu, R., Effendi, D., & Sari, V. N. (2025). Uji Kadar Kafein dan Uji Organoleptik Terhadap Pembuatan Teh Daun Kopi Robusta. *Jurnal Agroteknologi (AGRONU)*, 4(2), 252–260.
- Rish, A. J., Henson, S., Drennen, J. K., & Anderson, C. A. (2024). *Defining the Range of Calibration Burden: From Full Calibration to Calibration-Free*. *Journal of Pharmaceutical Innovation*, 1–5.
- Rizki, D., Wijonarko, B. R., & Purwanto. (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.
<https://doi.org/10.37577/composite.v2i1.168>
- Rohman, A., Siswindari, Erwanto, Y., & Che Man, Y. B. (2011). *Analysis of Pork Adulteration in Beef Meatball Using Fourier Transform Infrared (FTIR) Spectroscopy*. *Meat Science*, 88(1), 91–95.
<https://doi.org/10.1016/j.meatsci.2010.12.007>
- Rosita, R., Budiastara, I. W., & Sutrisno. (2016). Prediksi Kandungan Kafein Biji Kopi Arabika Gayo dengan *Near Infrared Spectroscopy*. *Jurnal Keteknik Pertanian*, 4(2), 1–8.
<https://doi.org/10.19028/jtep.04.2.179-186>
- Safmi, N. A., Andasuryani, & Fahmy, K. (2025). *Non-Destructive Prediction of Moisture Content in Cascara Using NIR*

- Spectroscopy with PLS and PCR. Jurnal Keteknikaan Pertanian* 13(2), 249–264.
<https://doi.org/10.19028/jtep.013.2.249-264>
- Safonova, A., Ghazaryan, G., Stiller, S., Main-knorn, M., Nendel, C., & Ryo, M. (2023). *Ten Deep Learning Techniques to Address Small Data Problems with Remote Sensing. International Journal of Applied Earth Observation and Geoinformation*, 125, 103569.
<https://doi.org/10.1016/j.jag.2023.103569>
- Santoso, B., Parwiyanti, Gatot, P., Wijaya, A., Rosidah, U., Malahayati, N., Yanuariati, A., Hermanto, & Syafutri, I. M. (2025). Inovasi Pembuatan Teh Herbal dari Limbah Daun Kopi Robusta sebagai Upaya Pengurangan Sampah dan Peningkatan Kualitas Hidup Masyarakat. *Jurnal Ilmiah Pengabdian Masyarakat* 10(2), 590-595.
- Sari, M., Nasution, I. S., & Zulfahrizal. (2019). Prediksi Kadar Air Gabah Menggunakan *Near Infrared Reflectance Spectroscopy* dengan Metode *Principal Component Regression (Pretreatment Multiplicative Scatter Correction, Second Derivative dan De-trending)*. *Jurnal Ilmiah Mahasiswa Pertanian*, 4(1), 568–577.
<https://doi.org/10.17969/jimfp.v4i1.9830>
- Setiawan, E. A., AM, D. R., & Siswanti. (2015). Pengaruh Penyangraian Daun Kopi Robusta (*Coffea robusta*) Terhadap Karakteristik Kimia dan Sensory Minuman Penyegar. *Jurnal Teknosains Pangan*, 4(2), 1–9.
www.ilmupangan.fp.uns.ac.id
- Shen, S., Hua, J., Zhu, H., Yang, Y., Deng, Y., Li, J., Yuan, H., Wang, J., Zhu, J., & Jiang, Y. (2022). *Rapid and Real-Time Detection of Moisture in Black Tea During Withering Using Micro-Near-Infrared Spectroscopy. Lwt-Food Science Technology*, 155, 112970.
<https://doi.org/10.1016/j.lwt.2021.112970>
- Tian, Z., Tan, Z., Li, Y., & Yang, Z. (2022). *Rapid Monitoring of*

Flavonoid Content in Sweet Tea (Lithocarpus litseifolius (Hance) Chun) Leaves Using NIR Spectroscopy. Plant Methods, 18(1), 1–9.

<https://doi.org/10.1186/s13007-022-00878-y>

Triana, A., & Ramadhan, R. (2024). Analisis Ketersediaan Lahan Kawa Daun Sebagai Minuman Tradisional Minangkabau di Kecamatan Salimpaung Kabupaten Tanah Datar. *Jurnal Pendidikan Tambusai*, 8(3), 41426–41435.

Valderrama, P., Braga, J. W. B., & Poppi, R. J. (2007). Variable Selection, Outlier Detection, and Figures of Merit Estimation in a Partial Least-Squares Regression Multivariate Calibration Model. *Journal of Agricultural and Food Chemistry*, 55, 8331–8338.

Varmuza, K. (2001). *Applied Chemometrics: From Chemical Data to Relevant Information. Manuscript for Plenary Lecture*, 2, 1–17.

Watanabe, L. S., Bovolenta, Y. R., Junior, V. R. A., Barbin, D. F., Madeira, T. B., & Nixdorf, S. L. (2018). *Investigation of NIR Spectra Pre-processing Methods Combined with Multivariate Regression for Determination of Moisture in Powdered Industrial egg. Acta Scientiarum Technology*, 40. <https://doi.org/10.4025/actascitechnol.v40i1.30133>

Wiradinata, R., Budiastira, I. W., & Widodo, S. (2021). *Model Development of Non-Destructive Coffee Beans Moisture Content Determination Using Modified Near Infrared Spectroscopy Instrument. Pelita Perkebunan*, 37(3), 229–238.

<https://doi.org/10.22302/iccricri.jur.pelitaperkebunan.v37i3.462>

Yang, Q., Li, Y., Li, J., Zhang, Z., Liu, Q., Guo, G., Wang, S., & Wang, X. (2025). *Optimizing Near-Infrared Spectroscopy Models for Rapid and Green Detection of Crude Protein and Fat in Crop Grains Using Sample Set Division. ACS Omega*, 10, 14755-14769.

<https://doi.org/10.1021/acsomega.4c09155>

- Yulianda, H. (2024). Studi Potensi Kawa Daun Sebagai Destinasi Wisata Kuliner di Nagari Pariangan (Desa Terindah) Kabupaten Tanah Datar. *Jurnal Manajemen Perhotelan dan Parawisata*, 7(2), 9–14.
- Yuwita, F., Ifmalinda, & Makky. M. (2023). *Prediction of Caffeine and Protein of Arabica Coffee Beans Using Near Infrared Spectroscopy (NIRS)*. *Jurnal Teknik Pertanian Lampung*, 12(4) 852–862.
- Zagoskina, N. V., Zubova, M. Y., Nechaeva, T. L., Kazantseva, V. V., Goncharuk, E. A., Katanskaya, V. M., Baranova, E. N., & Aksenova, M. A. (2023). *Polyphenols in Plants : Structure , Biosynthesis , Abiotic Stress Regulation , and Practical Applications (Review)*. *Internasional Journal of Molecular Sciences*, 24, 13874.
- Zhang, Z. Y., Wang, Y. J., Yan, H., Chang, X. W., Zhou, G. S., Zhu, L., Liu, P., Guo, S., Dong, T. T. X., & Duan, J. A. (2021). *Rapid Geographical Origin Identification and Quality Assessment of Angelicae Sinensis Radix by FT-NIR Spectroscopy*. *Journal of Analytical Methods in Chemistry*.
<https://doi.org/10.1155/2021/8875876>

