

## DAFTAR PUSTAKA

- Abdi, H., & Williams, L. J. 2010. *Principal component analysis*. Wiley Interdisciplinary Reviews: Computational Statistics, 2(4), 433–459
- Adfa, M., D. Erlina, K. Wiradimafan, D. A. Triawan, Y. S. Salprima, A. Avidlyandi, and M. Rafi. 2024. Application of FTIR spectroscopy and chemometric to differentiate *Azadirachta excelsa* (Jack.) Jacobs lwaves extracts based on solvent polarity and assessment of antibacterial activity. *Molekul*. 19(2): 309 – 319.
- Alvionita, D. N., Rahayu, S., & Mubarik, N. R. 2020. Characterization, identification, and analysis of bioactive compound of endophytic bacteria from *Hoya multiflora* Blume. *Biodiversitas Journal of Biological Diversity*, 21(1), 195–202.
- Arslan, M., A. Arif, A. Rehman, and A. Hussain. 2017. Discrimination of plant species using FTIR spectroscopy: A rapid and non-destructive tool. *Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy*, 173, 175–181
- Azalia, D., I. Rachmawati, S. Zahira, F. Andriyani, T. M. Sanini, Supriyatin, dan N. R. Aluya. 2023. Uji kualitatif senyawa aktif flavonoid dan terpenoid pada beberapa jenis tumbuhan fabaceae dan Apocynaceae di kawasan TNGPP Bodogol. *Jurnal Biologi Makassar*. 8(1): 32-43
- Baltazar, A. M. and Buot, I. J. 2019. Controversies on *Hoya* R. Br. Taxonomy. *The Thailand Natural History Museum Journal*, 59-68.
- Brahmachari, G. 2011. Bioactive natural products: Opportunities and challenges in medicinal chemistry. World Scientific. Singapore
- Chua, L. S. L., Kiew, R., and Wong, K. M. 2013. Useful *Hoya* species of Peninsular Malaysia and their conservation status. *Gardens' Bulletin Singapore*, 65(2), 165–176
- Coates, J. 2000. Interpretation of Infrared Spectra, A Practical Approach. In: Meyers, R.A. (Ed.), *Encyclopedia of Analytical Chemistry*. Wiley. America
- Crozier, A., Clifford, M. N., and Ashihara, H. 2006. *Plant Secondary Metabolites: Occurrence, Structure and Role in the Human Diet*. Blackwell Publishing. America
- Desai S and P. Tatke. 2019. Phytochemical Markers: Classification, Applications and Isolation. *Curr Pharm Des*.25(22):2491-2498
- Ebajo, V. D., Ragasa, C. Y., and Shen, C. C. 2015. Terpenoids and Sterols from *Hoya multiflora* Blume. *Journal of Applied Pharmaceutical Science*, 5(4), 33–39.
- Foster, M. S., Smith, R. J., & Zhang, L. 2018. Environmental influences on morphological variation in wax plants. *Plant Ecology and Diversity*, 11(2), 245-255.
- Garden.org. 2023. Wax Plant (*Hoya lacunosa* 'Eskimo'). <https://garden.org/plants/view/656894/Wax-Plant-Hoya-lacunosa-Eskimo/>. [Diakses pada 27 Juni 2025].

- Guerra, M., De Carvalho, R., De Lima, L. C. O., & De Souza, G. T. 2010. Morphological characterization of medicinal plants: A basis for conservation and utilization. *Genetic Resources and Crop Evolution*, 57(7): 1017–1028.
- Gupta, S., Acharya, S. K., and Saha, S. 2014. Comparative analysis of morphological and molecular markers in plant diversity studies. *Plant Systematics and Evolution*, 300(5): 1023–1032.
- Hendryani, R., M. Lutfi, and L. C. Hawa. 2015. Ekstraksi antioksidan daun sirih merah kering (*Piper croctatum*) dengan metode pra-perlakuan ultrasonic assisted extraction (kajian perbandingan jenis pelarut dan lama ekstraksi. *Jurnal Bioproses Komoditas Tropis*. 3(2): 33-38
- Hidayat, T., Sari, R. M., dan Putra, A. 2021. Potensi senyawa bioaktif dari tanaman hias Indonesia: Studi awal pada genus *Hoya*. *Jurnal Biologi Tropis*, 21(1), 15–23.
- Ionta, M., G. M., Rodda, M., and Burton, C. M. 2015. Taxonomy and Phylogenetic Relationships in the Genus *Hoya* (Apocynaceae). *Botanical Journal of the Linnean Society*, 178(4): 473-488.
- Irnawati, F. D. O. Riswanto, S. Riyanto, S. Martono dan A. Rohman. 2021. Pemanfaatan paket perangkat lunak R factoextra dan FactoMineR serta aplikasi analisis komponen utama dalam autentikasi beragam jenis minyak. *Indonesian Journal of Chemometrics and Pharmaceutical Analysis*. 1(1): 1-10
- Kleijn, D., and van Donkelaar, R. 2001. Notes on the ecology and distribution of *Hoya* species in Central Sulawesi, Indonesia. *Blumea*, 46(2): 457–483.
- Kloppenburg, R. D., & Gilding, M. D. (2001). *Hoya: The genus and its hybrids*. *Hoyas Australia Publications*.
- Kumar, S., Yadav, A., and Kumar, D. 2018. Applications of FTIR spectroscopy in phytochemical analysis: A comprehensive review. *Journal of Pharmacognosy and Phytochemistry*, 7(3): 2582–2589.
- Kumari, R., Singh, S., and Singh, A. 2020. Integrative approach to evaluate genetic diversity using morphological and chemical profiling in *Ocimum* species. *Genetic Resources and Crop Evolution*, 67(6): 1281–1294.
- Li, Xueqin, Xie, Yilin, Zhu, Xueyan, & Zhang, Jing. (2020). Application of FTIR spectroscopy for rapid and non-destructive discrimination of different cultivars of *Camellia sinensis* based on leaf biochemical composition. *Industrial Crops and Products*, 145, 112093.
- Liede, S., and Meve, U. 2011. Phylogeny and evolution of *Hoya* species (Apocynaceae). *Systematic Botany*, 36(3): 471–482.
- Liu, Y., Wang, Z., Yang, C., and Li, X. 2021. Correlation between leaf morphology and secondary metabolite content in medicinal plants. *Industrial Crops and Products*, 170, 113817.
- Mohanty, S., Nayak, D., and Dash, S. K. 2013. Application of cluster and principal component analysis for grouping of genotypes. *Journal of Plant Breeding and Crop Science*, 5(11): 211–216.

- Ningtias, S.T.A., Harjono, C. Kurniawan, and S. B. W, Kusuma. 2023. Optimizing ultrasonic assisted extraction of dye from African tulip leaves (*Spatodhea campanulate* P. beauv) and optimization of its application as a textiles dye. Indonesian Journal of Chemical Science. 12(2): 143-160
- Patle, T. K., K. Shrivastava, R. Kurrey, S. Upadhyaya, R. Jangde, and R. Chauhan. 2020. Phytochemical screening and determination of phenolics and flavonoids in *Dillenia pentagyna* using UV-Vis and FTIR Spectroscopy. Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy. 242: 1-10.
- Prasain, J. K., Peng, N., & Wyss, J. M. 2004. Natural products and their biological activities in aging and neurodegeneration. Phytochemistry Reviews, 3(1): 15–28.
- Rahayu, D. A., Wahyuni, E., & Supriyanto, A. 2022. Morphological studies of *Hoya* species in Indonesia. Biodiversity Journal, 29(4): 300-308
- Rahayu, S. 2010. Sebaran dan Keragaman Genetik Populasi *Hoya multiflora* Blume (Asclepiadaceae) di Taman Nasional Gunung Gede Pangrao dan Sukamantri Taman Nasional Gunung Malimun, Salak. (Thesis). IPB: Bogor.
- Rahayu, S., and M. Rodda. 2019. *Hoya* of Sumatra, and update checklist, three new species, and a new subspecies. European Journal of Taxonomy. 508: 1-23
- Rahayu, S., M. Jusuf, Suharsono, C. Kusmana, and R. Abdulhadi 2010. Morphological variation of *Hoya multiflora* Blume at different habitat type of Bodogol Research Station of Gunung Gede Pangrango National Park, Indonesia. Biodiversitas. 11:187–193.
- Reddit - r/Hoyas. .2023. Is *Hoya krohniana* really a different species from *Hoya lacunosa*? [Diskusi forum]. <https://www.reddit.com/r/Hoyas/comments/1b4wln6/>. [Diakses pada 27 Juni 2025].
- Renner, S. S. 2001. Evolution of the Family Apocynaceae. Annual Review of Ecology and Systematics, 32: 453-487.
- Rodda, M. 2015. Two new species of *Hoya* R.Br. (Apocynaceae, Asclepiadoideae) from Borneo. Blumea, 60(3): 215–229.
- Rodda, M. 2015. An updated synopsis of *Hoya* (Apocynaceae-Asclepiadoideae) in Peninsular Malaysia, including 9 new species. Botanical Studies, 56(1), 1–51
- Rohman, A., A. N. Ikhtiarini, W. Setyaningsih, M. Rafi, N. S, Aminah, M. Insanu, I. Irnawati, and D. Santoso. 2021. The use of chemometrics for classification of sudaguri (*Sida rhombifolia*) based on FTIR spectra and antiradical activities. Indonesian Journal of Chemical. 21 (6): 1568 1576.
- Santana, P., Oliveira, J., and Fernandes, M. 2020. Morphological adaptations and phytochemical diversity in tropical plants. Botanical Journal of the Linnean Society, 192(3): 415-428.
- Silverstein, R. M., Webster, F. X., and Kiemle, D. J. 2014. Spectrometric Identification of Organic Compounds. Wiley, US

- Simpson. 2006. *Plant Systematics*. Elsevier Academic Press, London.  
<https://www.calameo.com/books/0013374007ad3f73f1951>
- Sleumer, H. 1966. The Genus *Hoya* in Southeast Asia. *Blumea*, 14: 123-140.
- Smith, B. C. 2011. *Fundamentals of Fourier Transform Infrared Spectroscopy* (2nd ed.). CRC Press. America
- Smith, T., and Jones, B. 2021. Leaf anatomy and secondary metabolites: A comparative study across species. *Plant Biology*, 24(1): 56-67.
- Suyanto, S., Santosa, D. A., and Wibowo, P. 2015. Morphological variation in *Hoya* species from Java and Bali. *Indonesian Journal of Botany*, 16(1): 56–65.
- Tjitrosoepomo G. 1999. *Morfologi Tumbuhan*. UGM Press, Indonesia.
- Umar, A.H., R. Syahrini, I. Ranteta'dung, and M. Rafi. 2023. FTIT-based fingerprinting combined with chemometrics method for rapid discrimination of *Jatropha* spp. (Euphorbiaceae) from different regions in South Sulawesi. *Journal of Applied Pharmaceutical Science*. 13(1): 139-149
- Van der Pijl, L. 1982. Ecology of Pollination in *Hoya* Plants. *Plant Systematics and Evolution*, 141(1): 59-67.
- Wang, Q., Y. Wang, X. Jiang, L. Ma, Z. Li, Y. Changm Y. Wang, and C. Xue. Amino acid profiling with chemometrics analysis as a feasible tool for the discrimination of marine derived peptide powders. *Foods*. 10: 1294
- Widiarsih, S., Siar, S., Lalusin, A., Carandang, J. and Borromeo, T. 2012. Genetic diversity assessment in vegetative and reproductive characters of *Hoya mindorensis* Schlechter. *Philippine Journal of Crop Science*, 23-29.
- Wu, C., H. Wang, Z. Liu, B. Xu, Z. Li, P. Song and Z. Chao. 2022. Untragedged metabolomics coupled with chemometrics for leaves and stem barks of dioecious *Morus alba* L. *Metabolites*. 12(2): 106
- Xu, B., Zhang, X., & Zhang, H. (2018). Application of FTIR spectroscopy and chemometric techniques for the identification of medicinal plants. *Applied Spectroscopy Reviews*. 53(5): 376–387.
- Zamir, D. 2001. Improving plant breeding with exotic genetic libraries. *Nature Reviews Genetics*. 2(12): 983–989.