

DAFTAR PUSTAKA

- Alvarez, I., & Wendel, J. F. (2003). Ribosomal ITS sequences and plant phylogenetics inference. *Molecular Phylogenetic and Evolution*, 417-434.
- Aprilyanto, V., & Sembiring, L. (2016). *Filogenetika Molekuler, Teori dan Aplikasi*. Yogyakarta: Innosain.
- Baldwin, B. G., Sanderson, M. J., Porter, J. M., Wojciechowski, M. F., Campbell, C. S., & Donoghue, M. J. (1995). The ITS region of nuclear ribosomal DNA: A valuable source of evidence on angiosperm phylogeny. *Annals of the Missouri Botanical Garden*, 247-277.
- Brinegar, C. (2009). Assesing evolution and biodiversity in plants at the Molecular level. *Kathmandu University Journal of Science, Engineering and Technology*, 149-159.
- Buckley, D. S., Zasada, J. C., C., J., Tappeiner, I., & Stone, D. M. (1997). Plant morphological characteristics as a tool in monitoring response to silvicultural activities. *Proceedings of the National Silviculture Workshop* (pp. 37-41). United State: U.S, Department of Agriculture, Forest Service, Northeastern Forest Experiment Station.
- Bunu, S. J., Otele, D., Alade, T., & Dodoru, R. T. (2020). Determination of Serum DNA Purity among Patients Undergoing Antiretroviral Therapy using NanoDrop-1000 Spectrophotometer and Polymerase Chain Reaction. *Biomedical and Biotechnology Research Journal* , 214-219.
- Cain, A. J., & Harrison, G. A. (1960). Phyletic Weighting. *Proceedings of the Zoological Society of London*, 1-31.
- Carrasco, B., Avila, P., Perez-Diaz, J., Munoz, P., Garcí'a, R., Lavandero, B., & Zurita-Silva, A. (2008). Genetic structure of highland papayas (*Vasconcellea pubescens* (Lenne'et C. Koch) Badillo) cultivated along a geographic gradient in Chile as revealed by Inter Simple Sequence Repeats (ISSR). *Genetic Resources and Crop Evolution*, 331-337.
- Carvalho, F. A., & Renner, S. S. (2012). A dated phylogeny of the papaya family (Caricaceae) reveals the crop's closest relatives and the family's biogeographic history. *Molecular Phylogenetics and Evolution*, 46-53.

- Carvalho, F. A., G. Davidse, S., Mario, S., Sandra, K., & Chiang, F. (2015). Caricaceae in Universidad Nacional Autonoma Mexico, Missouri Botanical Garden and The Natural History Museum (London). *Flora Mesoamericana*, 235-239.
- Carvalho, F., Filer, D., & Renner, S. S. (2014). Taxonomy in the electronic age and an e-monograph of the papaya family (Caricaceae) as an example. *Cladistics*, 321–329.
- Cho, A. (2012). Constructing Phylogenetic Trees Using Maximum Likelihood. *Scripps Senior Theses*, Paper 46.
- Chouduri, S. (2014). Fundamentals of Molecular Evolution. In S. Chouduri, *Bioinformatics for Beginners* (pp. 27-53). Maryland: Academic Press.
- Council, N. R. (1989). *Lost crops of the Incas : little-known plants of the Andes with promise for worldwide cultivation*. Washington, DC: The National Academies Press.
- Davies, T. J., & Buckley, L. B. (2011). Phylogenetic diversity as a window into the evolutionary and biogeographic histories of present-day richness gradients for mammals. *Philosophical Transactions of the Royal Society B: Biological Sciences*, 366(1576): 2414–2425.
- De Candolle, A. (1864). *Prodromus Systematis Naturalis Regni Vegetabilis , Sive, Enumeratio Contracta Ordinum Generum Specierumque Plantarum Huc Usque Cognitarium Juxta Methodi Naturalis, Normas Digest*. *Biodiversity Heritage Library*, 419.
- Duminil, J., & Michele, M. (2009). Plant Species delimitation : A comparison of morphological and molecular markers. *Plant Biosystems*, 528-542.
- Eriksson, G., & Ekberg, I. (2001). *An Introduction to Forest Genetic*. Uppsala: Swedish University of Agricultural Sciences.
- Fachrul, M. F. (2008). *Metode Sampling Bioekologi*. Jakarta: Bumi Aksara.
- Fitmawati. (2003). Relevansi Batasan Spesies dan Intraspesies Van Steenis pencacah Molekuler. *Jurnal Floribunda*, 4.
- Global, G. (2021, Desember 23). *Species of Vasconcellea A. St.-Hil*. Retrieved from GRIN Global Web site: <https://www.npgsweb.arsgrin.gov/gringlobal/taxon/taxonomyspecieslist?id=16942&type=genus>

- Glogovac, S., Takač, A., Tepić, A., Šumić, Z., Gvozdanović-Varga, J., Červenski, J., . . . Popović, V. (2012). Principal Component Analysis of Tomato Genotypes Based on Some Morphological and Biochemical Quality Indicators. *Ratarstvo i Povrtarstvo*, 296-301.
- Hall, T. (2001). *BioEdit version 5.0.6*. Raleigh, North Carolina: North Carolina State University, Department of Microbiology.
- Hamrick, J. L., & Godt, M. J. (1996). Effects of Life History Traits on Genetic Diversity in Plant Species. *Philosophical Transactions of the Royal Society B*, 1291-1298.
- Hanum, Laila, Kasiamdari, Rina, S., Santosa, & Rugayah. (2013). The Phylogenetic Relationship Among Varieties of *Lansium domesticum* Correa Based on ITS rDNA Sequences. *Indonesian Journal of Biotechnology*, 123-132.
- Hobbs, J. A., Herwerden, L. V., Jerry, D. R., Jones, G. P., & Munday, P. L. (2013). High Genetic Diversity in Geographically Remote Populations of Endemic and Widespread Coral Reef Angelfishes. *Diversity*, 39-50.
- Huelsenbeck, J., bollback, J., & Levine, M. A. (2002). Inferring the Root of a Phylogenetic Tree. *Systematic Biology*, 32-43.
- IBPGR. (1988). *Descriptors for Papaya*. Rome, Italy: International Board for Plant Genetic Resources.
- Irwin, S., Kaufusi, P., Banks, K., de la Pe, R., & Cho, J. J. (1998). Molecular characterization of taro (*Colocacia esculenta*) using RAPD markers. *Euphytica*, 183–189.
- Jeffers, J. N. (1967). Two Case Studies in the Application of Principal Component Analysis. *Journal of the Royal Statistical Society. Series C* , 225-236.
- Karp, S., Kresovich, K. V., Bhat, W. G., Ayad, & T., H. (1997). Molecular tools in plant genetic resources conservation : a guide to technologies. *IPGRI Technical Bulletin*, 2.
- Kettenring, J. R. (2006). The Practice of Cluster Analysis. *Journal of Classification*, 3-30.
- Kovach. (2007). *Multi-Variate Statistical Package. Ver 3.1*. Wales. U.K: Kovach Computing Services. Pentraeth.
- Kresovich, S., Lamboy, W., Rugang, L., Jianping, R., Szewc-Mcfadden, A. K., & Blik, S. M. (1994). Application of molecular methods and statistical

analysis for discrimination of accessions and clones of vetiver grass. *Crop Science*, 805–809.

- Kyndt, T., Droogenbroeck, B., Romeijn-Peters, E., Romero-Motochi, J., Scheldeman, X., Goetghebeur, P., . . . Gheysen, G. (2005). Molecular phylogeny and evolution of Caricaceae based on rDNA internal transcribed spacers and chloroplast sequence data. *Molecular Phylogenetics and Evolution*, 442-459.
- Kyndt, T., Romeijn-Peters, E., Droogenbroeck, B. V., Romero-Motochi, J. P., Gheysen, G., & Goetghebeur, P. (2005). Species Relationship In The Genus *Vasconcellea* (Caricaceae) Based on Molecular And Morphological Evidence. *American Journal of Botany*, 1033-1044.
- Laily, A. N., Alfiah, I., & Khoiri, A. N. (2018). Karakterisasi *Carica pubescens* Lenne & K. Koch di Jawa Timur. *Prosiding Seminar Nasional VI Hayati 2018*, 65-78.
- Laily, A. N., Suranto, S., & Sugiyarto, S. (2012). Characterization of *Carica pubescens* in Dieng Plateau, Central Java based on morphological characters, antioxidant capacity, and protein banding pattern. *Nusantara Bioscience*, 16-21.
- Laily, A., Purnomo, P., Daryono, B., & Purwantoro, A. (2021). Local Knowledge: Sex Determination on *Vasconcellea Pubescens* A.DC in Java, Indonesia. *1st International Conference on Education, Humanities, Health and Agriculture*. Ruteng, Flores, Indonesia: EAI Research Meets Innovation.
- Lean, C., & Maclaurin, J. (2016). The Value of Phylogenetic Diversity. In R. Pellens, & P. Grandcolas, *Biodiversity Conservation and Phylogenetic Systematics* (pp. 19-37). Switzerland: Springer Cham.
- Librado, P. J., & Rozas, J. (2009). DnaSP v5: A Software for Comprehensive Analysis of DNA Polymorphism Data. *Bioinformatics*, 2 (11): 1451-2.
- Lucena-Aguilar, G., Sánchez-López, A. M., Barberán-Aceituno, C., Carrillo-Ávila, J. A., López-Guerrero, J. A., & Aguilar-Quesada, R. (2016). DNA Source Selection for Downstream Applications Based on DNA Quality Indicators Analysis. *Biopreservation and Biobanking*, 264-270.
- Luo, G.-H., Li, X.-H., Han, Z.-J., Zhang, Z.-C., Yang, Q., Guo, H.-F., & Fang, J.-C. (2016). Transition and Transversion Mutations Are Biased towards GC in Transposons of *Chilo suppressalis* (Lepidoptera: Pyralidae). *genes*, 7 (10), 72.

- Mabberley, D. J. (2017). *Mabberley's Plant-Book: A Portable Dictionary of Plants, Their Classification and Uses, Fourth edition*. New York: Cambridge University Press.
- Maddison, W. P., & Maddison, D. R. (2019). *Mesquite: a modular system for evolutionary analysis*.
- Martiwi, I. N., Nugroho, L. H., Daryono, B. S., & Susandarini, R. (2020). Morphological Variability and Taxonomic Relationship os *Sorghum bicolor* (L.) Moench Accessions Based on Qualitative Characters. *Annual Research and Review in Biology*, 35(6): 40-52.
- Miller, J. T., Jolley-Rogers, G., Mishler, B. D., & Thornhill, A. H. (2018). Phylogenetic diversity is a better measure of biodiversity than taxon counting. *Journal of Systematics and Evolution*, 663-667.
- Moore, P. H. (2013). Phenotypic and Genetic Diversity of Papaya. In R. Ming, & P. H. Moore, *Genetics and Genomics of Papaya* (pp. 35-45). New York: Springer.
- Nei, M., & Kumar, S. (2000). *Molecular Evolution and Phylogenetics*. New York: Oxford University Press.
- Nixon, K. C. (2013). Phylogeny. In S. A. Levin, *Encyclopedia of Biodiversity (Second Edition)* (pp. 16-23). New York: Academic Press.
- Nonić, M., & Šijačić-Nikolić, M. (2019). Genetic Diversity: Sources, Threats, and Conservation. *Life on Land*, 1-15.
- Novalina, D. (2013). Aktivitas Antibakteri Ekstrak Daun *Carica pubescens* dari Dataran Tinggi Dieng terhadap Bakteri Penyebab Penyakit Diare. *El-Vivo*, 1-12.
- Oktavianingsih, L. (2019). *Keragaman dan Hubungan Kekerabatan Kultivar Talas (Colocasia spp.) di Kalimantan Berdasarkan karakter Morfologis, Anatomis, Molekular. (Desertasi)*. Yogyakarta: Fakultas Biologi. Universitas Gadjah Mada.
- Online, P. o. (2022, Januari 12). *Vasconcellea pubescens* A.DC. Diambil kembali dari Royal Botanical Gardens KEW: Plant of the World Online: <https://powo.science.kew.org/taxon/urn:lsid:ipni.org:names:675782-1#sources>

- Ortiz-Burgos, S. (2015). Shannon-Weaver Diversity Index. In C. W. Finkl, *Encyclopedia of Earth Science Series* (pp. 572-573). Switzerland: Springer Nature.
- Pabendon, M., Azrai, M., Kasim, F., & Mejaya, M. (2004). Prospek Penggunaan Markah Molekuler dalam Pemuliaan Jagung. *Maros (ID): Pusat Penelitian dan Pengembangan Tanaman Pangan, Balitsereal*, 96-109.
- Pandin, D. S. (2010). Penanda DNA Untuk Pemuliaan Tanaman Kelapa (*Cocos nucifera* L.) . *Perspektif*, 21-35.
- Paniagua-Zambrana, N. Y., Bussmann, R. W., & Romero, C. (2020). Ethnobotany of the Andes. In N. Y. Paniagua-Zambrana, & R. W. Bussmann, *Ethnobotany of Mountain Regions Series* (pp. 83-104). New York : Springer.
- Prabhukumar, K. M., Sunil, C. N., Naveen Kumar, V. V., Chhabra, T., Mohanraj, N., & Balachandran, I. (2018). On the identity and distribution of *Vasconcellea pubescens* (Caricaceae) in Asia. *Nelumbo*, 114.
- Priyanka, V., Kumar, R., Dhaliwal, I., & Kaushik, P. (2021). Germplasm Conservation: Instrumental in Agricultural Biodiversity - A Review. *Sustainability*, 6743.
- Purnomo. (2013). Biosistemika tanaman uwi (*Dioscorea alata*) di Indonesia berdasarkan kajian Morfologis, Anatomis dan Molekular. *Disertasi (tidak dipublikasikan). Fakultas Biologi*.
- Qin, Y., Li, M., Cao, Y., Gao, Y., & Zhang, W. (2017). Molecular thresholds of ITS2 and their implications for molecular evolution and species identification in seed plants. *Scientific Reports*, 7(1):17316.
- Quazi, S., Golani, T., & Capuzzo, A. M. (2021). Endangered Plants: Germplasm Conservation. Chapters 7. *intechopen*, 1-28.
- Radford, A. (1986). *Fundamentals of Plants Systematics*. New York: Harper & R. Publisher, Inc.
- Rugayah, Retnowati, A., Windadri, F. I., & Hidayat, A. (2004). *Pedoman Pengumpulan Data Keanekaragaman Flora : Pengumpulan data Taksonomi*. Bogor: Pusat Penelitian Biologi. Bogor.
- Saha, O., Hossain, M. S., & Rahaman, M. M. (2020). Genomic exploration light on multiple origin with potential parsimony-informative sites of the severe

acute respiratory syndrome coronavirus 2 in Bangladesh. *Gene Reports*, (21), 1-9.

Salvatierra-González, M. A., & Jana-Ayala, C. (2016). Floral expression and pollen germination ability in productive mountain papaya (*Vasconcellea pubescens* A.DC.) orchards. *Chilean journal of agricultural research*, 136-142.

Sambrook, J., Fritsh, E. F., & Maniatis, T. (1989). *Molecular cloning : a laboratory manual. 2nd Edition*. New york: Cold Spring Harbor Laboratory Press.

Saracli, S., Dogan, N., & Dogan, I. (2013). Comparison of hierarchical cluster analysis methods by cophenetic correlation. *Journal of Inequalities and Applications*, 203.

Sarno, & Wahyudi, A. (2018). Transfer Teknologi Pengolahan Manisan Carica Pada Kelompok Masyarakat Dieng Kulon Banjarnegara. *Media Agrosains*, 16-23.

Sattler, R., & Rutishauser, R. (1997). The Fundamental Relevance of Morphology and Morphogenesis to Plant Research. *Annals of Botany*, 571-582.

Scheldeman, X., Willemen, L., Coppens D'Eeckenbrugge, G., Romeijn-Peeters, E., Restrepo, M. T., Romero Motoche, J., . . . Goetgebeur, P. (2007). Distribution, diversity and environmental adaptation of highland papayas (*Vasconcellea* spp.) in tropical and subtropical America. *Biodiversity and Conservation*, 1867–1884.

Seipp, M. T., Herrmann, M., & Wittwer, C. T. (2010). Automated DNA Extraction, Quantification, Dilution, and PCR Preparation for Genotyping by High-Resolution Melting. *Journal of Biomolecular Techniques*, 163-166.

Sharma, K., Mishra, A. K., & Misra, R. S. (2008). A simple and efficient method for extraction of genomic DNA from tropical tuber crops. *African Journal of Biotechnology*, 1018-1022.

Shirkhorshidi, A. S., Aghabozorgi, S., & Wah, T. Y. (2015). A Comparison Study on Similarity and Dissimilarity Measures in Clustering Continuous Data. *Journal Plos ONE*, 1-20.

Singh, G. (2019). *Plant systematics : an integrated approach. Fourth edition*. Boca Raton, London: CRC Press.

- Sneath, P. H., & Sokal, R. R. (1973). *Numerical Taxonomy*. San Francisco: W. H. Freeman.
- Sneath, P. H., & Sokal, R. R. (1973). *Principles of Numerical Taxonomy*. San Francisco. London: W. H. Freeman and Co.
- Sokal, R. R. (1986). Phenetic Taxonomy : Theory and Methods. *Annual Review of Ecology and Systematics*, 423-442.
- Sokal, R. R., & Sneath, P. H. (1963). *Principles of Numerical Taxonomy*. San Francisco: W. H. Freeman.
- Su, M.-H., Tsou, C.-H., & Hsieh, C.-f. (2007). Morphological Comparison of Taiwan Native Wild Tea Plant (*Camellia sinensis* (L.) O. Kuntze forma *formosensis* Kitamura) and Two Closely Related Taxa Using Numerical Methods. *Taiwania*, 70-83.
- Susandarini, R. (2014). *Biosistemika pamelu (Citrus maxima (Burm.) Merr.) di Indonesia berdasarkan kajian Morfologis, Fitokimia dan Molekular*. Yogyakarta: Disertasi (tidak dipublikasikan). Fakultas Biologi. Universitas Gajah Mada.
- Teixeira, J. C., & Huber, C. D. (2020). The inflated significance of neutral genetic diversity in conservation genetics. *Journal of PNAS*, 1-10.
- The Ohio State, U. (2023, April 18). *Ornamental Plant Germplasm Center*. Retrieved from OPGC. Ornamental Plant Germplasm Center: <https://opgc.osu.edu/node/88#:~:text=An%20accession%20is%20a%20group,a%20given%20population%20of%20plants>.
- Tineo, D., Bustamante, D. E., Calderon, M. S., Mendoza, J. E., Huaman, E., & Oliva, M. (2020). An integrative approach reveals five new species of highland papayas (*Caricaceae*, *Vasconcellea*) from northern Peru. *PLoS ONE*, 12.
- UPOV. (2014). *Papaya: Carica Papaya*. Geneva: International Union for The Protection of New Varieties of Plants.
- Vellend, M., Cornwell, W., Magnuson-Ford, K., & Mooers, A. (2011). Measuring phylogenetic diversity In Magurran AE, & McGill B.(Eds.). *Biological diversity: Frontiers in measurement and assessment*, 193–206.
- Verhey, E. W., & Coronel, R. E. (1997). *Prosea Sumber Daya Nabati Asia Tenggara 2: Buah-buahan yang Dapat Dimakan*. Jakarta: PT. Gramedia Pustaka Utama.

- Wadekar, A. B., Nimbalwar, M. G., Panchale, W. A., Gudalwar, B. R., Manwar, J. V., & Bakal, R. L. (2021). Morphology, phytochemistry and pharmacological aspect of *Carica papaya*, an review. *GSC Biological and Pharmaceutical Sciences*, 234-248.
- Warnakula, W., Kottarachchi, N., & Yakandawala, K. (2017). Morphological, SSR and ISSR Marker Based Genetic Diversity Assessment of Mountain Papaya Germplasm in Comparison with *Carica papaya*. *Journal National Science Foundation Sri Lanka*, 255-264.
- WeiB, M., & Goker, M. (2010). Molecular Phylogenetic Recontruction. In C. P. Kurtzman, & F. J. W., *The Yeasts* (pp. 159-174). Brazil: Elsevier B.V.
- White, T., Bruns, S., & Taylor. (1990). Amplification and Direct Sequencing of Fungal Ribosomal RNA Genes For Phylogenetic. *Academic press.Inc*.
- Witono, J. R., Konishi, T., & Kondo, K. (2008). DNA polymorphism of *Alocacia odora* and *A. cucullata* in Ishigaki Island, Japan generated by RAPD and ISSR markers and ITS nrDNA sequence data. *Chromosome botany*, 11-18.
- Yao, H., Song, J., Liu, C., Luo, K., Han, J., Li, Y., . . . Chen, S. (2010). Use of ITS2 Region as the Universal DNA Barcode for Plants and Animals. *Plos One*, 5 (10).
- Zhou, X., Liu, Y., Guo, M., Su, K., & Zhang, Y. (2016). Species Clarification of the Widely Cultivated *Ganoderma* in China Based on rDNA and FIP Gene Sequence Analysis. *International Journal of Agriculture And Biology*, 18: 932–938.