

DAFTAR PUSTAKA

- Adzkiya, Z,A,M., dan Hidayat,P,A.2022. Uji Fitokimia, Kandungan Total Fenol Dan Aktivitas Antioksidan Kopi Arabika (*Coffea Arabica*) Pada Tingkat Penyangraian Sama. Jurnal Sains Terapan : Wahana Informasi dan Alih Teknologi Pertanian. 12 (1) : 101 – 112
- Agustini, Nurisjah S, Sulistyaningsih YC. 1999. Identifikasi ciri arsitekturis dan kerapatan stomata 25 jenis pohon suku *Leguminosae* untuk elemen lanskap tepi jalan. Bul. Taman Lansk Indonesia 2(1): 2-6
- Ajhar,M,N dan Meilani, D. 2020. Skrining Fitokimia Dan Uji Aktivitas Antioksidan Dari Ekstrak Etanol Biji Kopi Arabika (*Coffea Arabica*) Yang Tumbuh Di Daerah Gayo Dengan Metode Dpph. Pharma Xplore. 5(1). 34-40
- Alfarado,W,C., Bobadilla,G,L., Valqui,L., Valqui,S,G., Valqui,V,L., Virgo,N,C & Azques,V,V,H. 2022. Characterization of *Coffea arabica* L. parent plants and physicochemical properties of associated soils, Peru. Heliyon. e10895
- Anam,K., Sirrapa,P,M., Sangkala, Nurwahyuningsi, Meilin,A., Marda,B,A., Irawan,C,N., Handayani,T,H.,dan Masrika, E,U,N. 2023. Budidaya Tanaman Kopi dan Olahan Untuk Kesehatan. Makassar: CV Tohar Medika
- Andarini,F,D dan Purwaningsi,A. 2020. Siklus Diurnal Curah Hujan Di Pulau Sulawesi Distribusi Spasial Dan Musiman (Diurnal Cycle Of Rainfall In Sulawesi Spatial And Seasonal Distribution). Jurnal Sains Dirgantara. 17 (2): 95 – 108
- Arruda, S. R., Pereira, D. G., Silva, C. M. M., Brito, M. G., Waldschmidt, A. M. (2017). An optimized protocol for DNA extraction in plants with a high content of secondary metabolites, based on leaves of *Mimosa tenuiflora* (Willd.) Poir. (*Leguminosae*). Genetics and Molecular Research 16(3):1-9.
- Badu-Apraku, B., Garcia-Oliveira, A. L., Petroli, C. D., Hearne, S., Adewale, S. A., & Gedil, M. (2021). Genetic diversity and population structure of early and extra-early maturing maize germplasm adapted to sub-Saharan Africa. BMC Plant Biology, 21(1), 1–15. <https://doi.org/10.1186/s12870-021-02829-6>
- Baltazar,D,M & Fabella,O,A,M,J. 2020. Assessment of the Genetic Diversity of Philippine Arabica Coffee (*Coffea arabica* L.) Using SSR Markers. Philippine Journal of Science. 149 (3-a): 993-1003
- Bantaeng,K .2023. Laporan Kinerja Tahunan 2022 Pemerintah Kabupaten Bantaeng. Bantaeng. Sulawesi Selatan. Indonesia
- Bare,Y., Timba,S,N,F., Sari,T,R,D dan Nurak, D,M,M. 2022. Kajian Molekuler Farmakoinformatika Kulit Kopi Sebagai Antivirus Covid-19. Jawa Tengah :PT Nasya Expanding Manegment
- Budi,M,I dan mawardi,A. 2021. Identifikasi Molekular Kekerabatan Genetik Kopi Wamena Berbasis Marka Random Amplified of Polymorphic DNA (RAPD). Jurnal Biologi Papua. 13(1): 8-18
- Cahyadi,A,P,D,M., Tarjoko.,Purwanto. 2021.Pengaruh Ketinggian Tempat Terhadap Sifat Fisiologi Dan Hasil Kopi Arabika (*Coffea Arabica*) Di Dataran Tinggi Desa

- Sarwodadi Kecamatan Pejawaran Kabupaten Banjarnegara. Jurnal Ilmiah Media Agrosains .7(1), 1-7
- Carsono,N.,Lukman,N.P., Damayanti,F.,Susanto,U & Sari,S. 2014. Identifikasi Polimorfis Marka-Marka Molekuler Yang Diduga Berkaitan Dengan Karakter Daya Hasil Tinggi Pada 30 Genotip Padi. Chimica et Natura Acta Vol.2 No.1, April 2014:91-95
- Descriptors for IPGRI International Plant Genetic Resources Institute IPGRI Coffee (*Coffea spp.* and *Psilanthes spp.*).1996
- Gedil, M., & Menkir, A. (2019). An Integrated Molecular and Conventional Breeding Scheme for Enhancing Genetic Gain in Maize in Africa. Frontiers in Plant Science, 10(November), 1–17. <https://doi.org/10.3389/fpls.2019.01430>
- Hanafiah, D.S., Trikoesoemaningtyas, Yahya, S., & Wirnas, D. (2010). Induced mutations by gamma ray irradiation to Argomulyo soybean (*Glycine max*) variety. Nusantara Bioscience, Indonesia.
- Hapsari,P,T .,Munandar,K & Wibowo,A. 2023. Stomata Diversity Profile of Several Coffee Species at the Indonesian Coffee and Cocoa Research Center. Jurnal Ilmiah Biologi Eksperimen dan Keanekaragaman Hayati (J-BEKH). 10(2): 21-28
- Hildebrand, C. E., Torney, D. C., Wagner, R. P. (1992). Informativeness of polymorphic DNA markers. Los Alamos Science. 20:100-102.
- Izzah, K.I., Randriani,E & Dani. 2015. Analisis Kekerabatan Genetik Kultivar Kopi Arabika Berbuah Kuning Dan Berbuah Merah Berdasarkan Marka Ssr. J. Tidp 2(3), 113-122
- Kurnia, S., Ropalia., Zasari, M. 2023. Karakterisasi Morfologi Tanaman Kopi Rakyat di Pulau Bangka. J. Agro Ind. Perkeb.11 (2), 115-132
- Latunra,I,A. 2013. Pemetaan Potensi Plasma Nutfah Kopi Arabika Tipika (*Coffea arabica Linn var typica*) di Sulawesi Selatan Berbasis Kajian Fenotipik dan Analisi DNA Molekuler SSRs. Disertasi.Universitas Hasanuddin. Makassar. Indonesia
- Lestari, E.G., 2006. Hubungan antara Kerapatan Stomata dengan Ketahanan Kekeringan pada Somaklon Padi Gajahmungkur, Towuti, dan IR 64. Jurnal Biodiversitas. 7(1): 44-48.
- Liu, K., & Muse, S. V. (2005). Power Maker: An integrated analysis environment for genetic maker analysis. Bioinformatics, 21 (9), 2128–2129. <https://doi.org/10.1093/bioinformatics/bti282>
- Liu, S., Zhonk,H., Zhang,F., Wang,X., Wu,X., Wang,J dan Shi,W. 2023. Genetic Diversity and Core Germplasm Research of 144 Munake Grape Resources Using 22 Pairs of SSR Markers. Horticulturae. 2-15
- Madhav, P., Manigopa, C., Z, A. H., Anita, P., Rameshwar, P. S., Kumar, S. (2016). Genetic diversity assay of maize (*Zea mays L.*) inbreds based on morphometric traits and SSR markers. African Journal of Agricultural Research, 11(24), 2118–2128. <https://doi.org/10.5897/ajar2015.10404>
- Mawardi, A. 2016. Uji Efektivitas Metode Isolasi DNA Genom Kopi Arabika (*Coffea Arabica L.*) Asal Kabupaten Jayawijaya. Jurnal Biologi Papua. Vol 8 (7): 7-12

- Ma'wah. S. 2022. Strategi Pengembangan Industri Pengelolahan Kopi pada UKM Labbo Coffee Banyorang Kecamatan Tompobulu Kabupaten Bantaeng.Tesis. Universitas Hasanuddin. Makassar. Indonesia
- Mishra MK, Dadmajyothi P, Nayani SP, Munikoti SS, Chelukunda SS, Jayarama. 2011. Variability in stomatal feature and leaf venation pattern in Indian coffee (*Coffea arabica L.*) cultivars and their functional significance. *Botanica Serbica*. 32(2) : 111-119.
- Mudaningrat,A., Umaya,F., Syahriza,A,A,F., Anggraito, U,Y., Setiati,N. 2023. Literature Review Aplikasi Penanda Molekuler untuk Analisis Keanekaragaman Genetik Hewan. *Biopendix*, 10 (1), 11-25
- Muttaqin, Z,S. 2023. Anatomi Tumbuhan Sel, Jaringan, Dan Organ Vegetatif Pada Tumbuhan. Jakarta Timur : UKI Press
- Nurman,A,T., Syata,I., dan Wulandari,D,C. 2021. Prediksi Hasil Panen Kopi Di Sulawesi Menggunakan Analisis Rantai Markov. *Jurnal Matematika dan Statistika serta Aplikasinya*. 9 (2) :120-127
- Pangaribuan, O., Hanafiah, D. S., Setiado, H., Simamora, J. R. M., & Sari, N. W. (2022). Quantity and Quality Test of DNA Marigold Plants (*Tagetes erecta L.*) for the Sustainability of Plant Breeding. *IOP Conference Series: Earth and Environmental Science*, 977(1), 3–8. <https://doi.org/10.1088/1755-1315/977/1/012047>
- Rohlf FJ. 2001. *NTSys-pc Numerical Taxonomy and Multivariate Analysys System* Verson 2.2. User Guide. New York (US): Exterter Software.
- Sakiro,S & Aunillah,A. 2020. Bentuk, Ukuran dan Kerapatan Stomata Daun dari Lima Varietas Kopi Arabika (*Coffea arabica L.*) Prosiding Seminar Nasional Lahan Suboptimal ke-8 Tahun 2020, Palembang 20 Oktober 2020. ISBN: 978-979-587-903-9 Penerbit: Universitas Sriwijaya (UNSRI)
- Silva,E,O,L.,Rodrigues, L,J,M., Ferreira,S,D,F,M., Almeida,D,N,R.,Ramalho,C,J., Rakocevic,M & Partelli,L,F. 2024. Modifications in floral morphology of *Coffea* spp. genotypes at two distinct elevations. *Flora* 152443
- Tambaru,E ., Bachtiar, B., Ura,R dan Tuwo, M. 2023. The Effects Morpho-Anatomical Characters Leaves *Tectona grandis* and *Gmelina arborea* as Carbon Dioxide Absorption in Unhas Urban Forest. *Internasional Jornal On Advanced Science Eginering Information Technology*. 13 (4). 1290-1296
- Tambaru, E., Paembonan, S.A., Sanusi, D., & Umar, A. 2014. Identifikasi struktur anatomi stomata penampang membujur daun pada beberapa jenis pohon hutan kota Unhas Makassar. *J. Alam dan Lingkung*. vol. 5(8): 1-4.
- Wibowo,A. 2021. Determining the Root Characteristics of Arabica Coffee Varieties in the Nursery Stage. *Agrotechnology Research Journal*. Vol 5(1) :18-25
- Yani, A., Chasani, A. R., & Daryono, B. S. (2022). Genetic diversity of eight maize (*Zea mays*) cultivars from East Nusa Tenggara (Indonesia) based on inter simple sequence repeat markers. *Biodiversitas*, 23(8), 4124–4130. <https://doi.org/10.13057/biodiv/d230833>

MORFOLOGI

Descriptors for IPGRI International Plant Genetic Resources Institute IPGRI Coffee (*Coffea spp.* and *Psilanthus spp.*) :

CHARACTERIZATION

6. Plant descriptors

6.1 Vegetative

* **6.1.1 Plant habit**

- 1 Bush (<5 m - without distinct trunk)
- 2 Shrub or small tree (<5 m - one or more trunks)
- 3 Tree (>5 m - single trunk)

6.1.2 Plant height

Visual estimation

		Reference variety
1	Very short	San Ramón (SR SR)
3	Short	Caturra (Ct Ct)
7	Tall	Typica (TT NaNa)
9	Very tall	Maragogype (Mg Mg)

6.1.3 Overall appearance

Specify age of plant

- 1 Elongated conical
- 2 Pyramidal
- 3 Bushy

* **6.1.4 Vegetative development**

- 1 Monopodial
- 2 Sympodial

6.1.5 Branch-ramification number

Average of ramifications scored on five well-developed branches

* **6.1.6 Branching habit**

- 1 Very few branches (primary)
- 2 Many branches (primary) with few secondary branches
- 3 Many branches (primary) with many secondary branches
- 4 Many branches (primary) with many secondary and tertiary branches

6.1.7 Angle of insertion of primary branches

(3.1)

(On the main stem)

- 1 Drooping
- 2 Horizontal or spreading
- 3 Semi-erect |

* **6.1.8 Stipule shape**
(See Fig. 3)

- 1 Round
- 2 Ovate
- 3 Triangular
- 4 ~~Deltate~~ (equilaterally triangular)
- 5 Trapeziform
- 6 Other (specify in descriptor **6.5 Notes**)

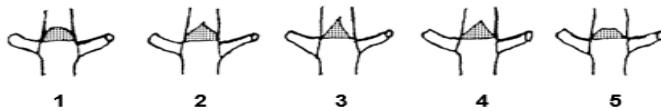


Fig. 3 Stipule shape

* **6.1.9 Stipule arista length [mm]**
Average of five well-developed stipule arista

6.1.10 Young leaf colour

(3.5)

- 1 Greenish
- 2 Green
- 3 Brownish
- 4 Reddish brown
- 5 Bronze
- 6 Other (specify in descriptor **6.5 Notes**)

- * **6.1.11 Leaf shape**
 (See Fig. 4) (3.4)
 1 Obovate
 2 Ovate
 3 Elliptic
 4 Lanceolate
 5 Other (specify in descriptor **6.5 Notes**)

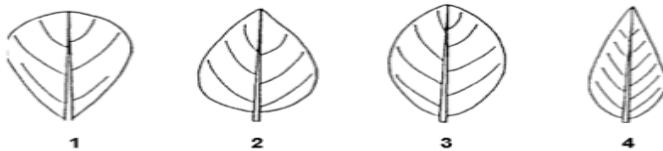


Fig. 4 Leaf shape

- * **6.1.12 Leaf apex shape**
 (See Fig. 5)
 1 Round
 2 Obtuse
 3 Acute
 4 Acuminate
 5 Apiculate
 6 Spatulate
 7 Other (specify in descriptor **6.5 Notes**)



Fig. 5 Leaf apex shape

- * **6.1.13 Leaf length [mm]**
 Average of five mature (> node 3 from the terminal bud) leaves, measured from petiole end to apex

- * 6.3.3 **Fruit shape** (3.8)
Average of five normal (not ~~caracoli~~) mature fruits. (See Fig. 6)
- 1 Roundish
 - 2 Obovate
 - 3 Ovate
 - 4 Elliptic
 - 5 Oblong
 - 6 Other (specify in descriptor **Notes**
6.5)



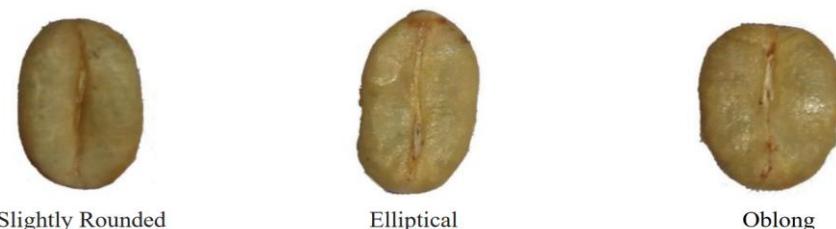
Fig. 6 Fruit shape

- * 6.3.4 **Absence/presence of fruit ribs**
0 Absent
1 Present
- 6.3.5 **Endocarp texture**
1 Coriaceous
2 ~~Subcoriaceous~~
3 Other (specify in descriptor **Notes**
6.5)
- * 6.3.6 **Fruit-disc shape**
The fruit-disc shape is positioned at the end of the coffee cherry
1 Not marked
2 Marked but not prominent
3 Prominent (cylindrical)
4 Beaked (apex constricted into bottleneck shape)
- * 6.3.7 **Calyx limb persistence**
0 No
1 Yes
- * 6.3.8 **Fruit length [mm]** (3.9)
Average of five normal green fruits, measured at the largest part

Bentuk Buah

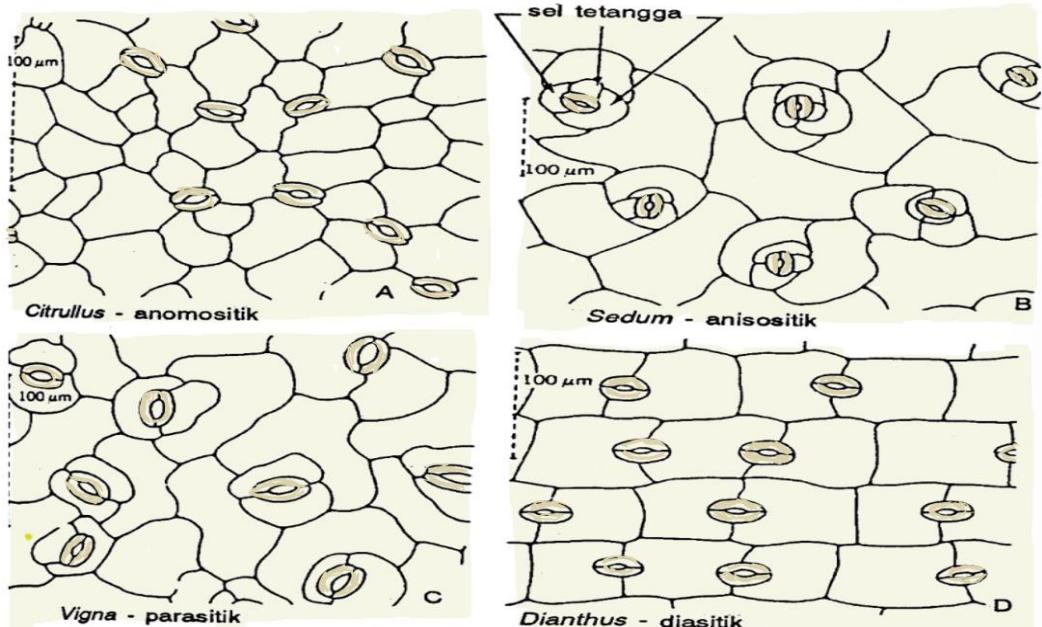


Bentuk Biji



ANATOMI

Jenis-Jenis Stomata



Lampiran Jaringan Epidermis Atas

