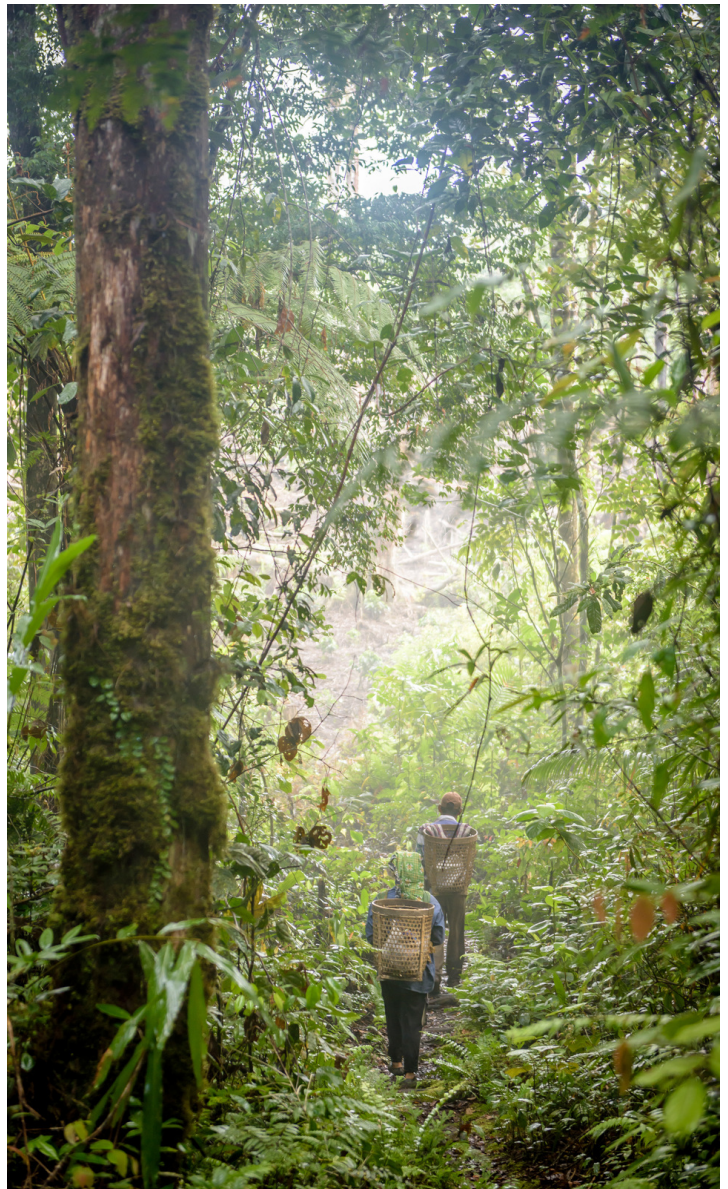


INDONESIA SHADE CATALOG

A resource for Indonesian coffee farmers and professionals on tree species found in and around coffee landscapes.



Cover Images

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Right: © Conservation International/photo by Tory Read

Last Updated

December 30, 2022

Website

For the most up-to-date version of this data, please visit our website at <https://www.shadecoffee.org/en/>

ABOUT

Why a Catalog?

Rising temperatures, distorted rainfall patterns and emerging challenges with pests and disease caused by climate change are affecting coffee production around the globe. With the recognition that retaining and replanting trees in coffee landscapes will be a critical strategy to climate change adaptation, farmers are exploring the need to maintain or re-introduce canopy cover in and around production systems, creating agroforestry settings that can play a central role in combating the effects of climate change and supporting income diversification strategies. However, farmers and practitioners often lack the information needed to select shade trees that are **good for coffee, support and diversify household incomes** and provide **benefits to wildlife** and **ecosystem services**.

The Shade Catalog is meant to do just that – provide coffee farmers and technical assistance teams key information about tree species that have been found in and around coffee landscapes. From the main attributes of the species, to the use and benefits, through to propagation and management tips, the catalog is a useful guide for whole-farm planning.

This catalog is intended to promote the diversity of shade trees within Indonesian coffee farming systems with applications for any group propagating shade trees or providing trainings about the importance of shade trees as a component of sustainable coffee management.

Choosing the right shade tree

Agroforestry systems generate significant environmental benefits though there are a number of tradeoffs that should be considered when providing guidance to farmers as they consider these options. Shaded coffee typically has lower productivity than full sun coffee and increase the cost of weeding, while pest pressure may be lower and natural predators more abundant in shade systems and therefore require less costly pest management products⁵. Economic trade-offs should be considered to find the right combination of shade trees that provide environmental benefits while generating economic returns. In addition to levels of revenue, the timelines are also important to consider, as timber species take longer to generate returns than fruit trees or other revenue generating shade variety options. Different management regimens and the timing of labor requirements should also be considered, as shade management can be labor intensive on mature shade trees and may also require special knowledge and training. These tradeoffs should be examined to ensure strong alignment with farmer needs and opportunities to help catalyze changes in farm management to advance broader environmental goals.

A living document

This catalog contains information about tree species currently found within Indonesian coffee farming systems. Some tree species facilitate coffee yields and improve soil nutrition, while other trees may be selected by farmers due to their farm, income, or biodiversity benefits. While many of these species are propagated by farmers, some simply occur on coffee farms through natural regeneration. Tree species accounts were created from interviews with farmer groups and agroforestry experts and data compiled from scientific publications and technical reports in both English and Bahasa. The catalog focuses on tree species but also includes commonly planted palms and shrubs. While this catalog compiles all current knowledge, future research is needed to establish propagation guides and establish how each species interacts with coffee plants. Nomenclature follows www.plantsoftheworldonline.org/. This catalog is intended to be a living document that will be refined and updated as more information or research becomes available about these species.

¹ Neilson, J. et al ,2015. Towards a more competitive and dynamic value chain for Indonesian coffee-Working Paper #7. Prepared for the World Bank, Washington DC.

² Sodhi, N. S., Koh, L. P., Brook, B. W., & Ng, P. K. (2004). Southeast Asian biodiversity: an impending disaster. *Trends in ecology & evolution*, 19(12), 654-660.

³ Ministry of Agriculture. 2019. Tree Crop Estate Statistics of Indonesia 2018-2020.

⁴ Hulupi R, Martini E. 2013. Pedoman budi daya dan pemeliharaan tanaman kopi di kebun campur. Bogor, Indonesia: World Agroforestry Centre (ICRAF) Southeast Asia Regional Program.

⁵ Johnson, M. D., J. L. Kellermann, and A. M. Stercho. "Pest reduction services by birds in shade and sun coffee in Jamaica." *Animal conservation* 13, no. 2 (2010): 140-147.

SHADE BENEFITS

So why all the fuss over trees? Trees clean our air and make it more breathable, clean our water, keep soil healthy, buffer floods, and provide habitat for wildlife and enhance biodiversity, all of which contributes to keeping us healthy.

Incorporating trees in and around coffee production, particularly native species, can also provide benefits to coffee and people. Here are just a few reasons why:

- **Coffee quality:** Evidence shows that coffee under shade produces higher weights of fresh fruits, larger beans and better visual appearance⁵.
 - **Climate regulation:** As climate change continues, coffee communities are heating up. Given that arabica requires cool temperatures between 18 and 21 degrees Celsius, shifts in on-farm temperatures put production at risk. Trees help reduce temperature volatility, cooling air during the day and keeping it warmer during the night, reducing stress on coffee plants.⁶
 - **Soil health:** Fallen leaves and roots help maintain healthy soils by offering natural aeration, nutrients and moisture, providing food for healthy soil fauna that convert the dead plant materials into nutrients available for plant growth.⁷
 - **Erosion prevention:** The presence of tree systems helps prevent erosion, particularly on steep slopes and under heavy rainfall, by reducing rainfall impact and holding soil together underground⁸. Leaf litter from the trees also helps diminish rain-induced erosion⁹.
 - **Water capture / regulation:** Rainwater is retained on tree leaves, to be released back into the air as evaporation. Leaves on the ground act as sponges, soaking up moisture and gradually releasing it. Shaded soils retain moisture far longer than soils exposed to sun. This is very important as climate-change-induced droughts increase in frequency and intensity. Finally, tree roots usually run deeper than coffee and other crops, so they don't compete with them for water or soil nutrients¹⁰.
 - **Pest control:** Trees provide safe refuge and habitat for pest predators such as birds, bats, ladybugs, spiders, and lizards. These natural predators eat insect pests that might otherwise harm coffee production, and pest outbreaks spread more slowly when trees are mixed into the farm. This natural pest control can decrease pesticide costs¹¹.
 - **Pollination:** Trees provide safe refuges for natural pest predators such as ladybugs, spiders, and lizards, and pollinators such as bees and butterflies, giving them rapid access to the coffee. More tree species support more pollinators, which is important for coffee as the diversity and abundance of bees impacts coffee fruit sets, fruit weights, and yields¹².
 - **Biodiversity:** Trees also provide habitat for native birds, reptiles, mammals, and other plant species such as orchids and bromeliads. Each layer of leaves above the coffee has unique microclimatic attributes, providing unique habitats for unique species¹³.
 - **Carbon capture:** Agroforestry systems in Indonesia can accumulate and store a significant amount of carbon, with values as high as 69.5 tons/ha¹⁴. Tree density is one of the most important metrics that influences carbon sequestration, as denser spacing leads to higher carbon stored per area¹⁵. Tree age/size is also important, with mature trees holding much more carbon than young trees.
 - **Income security:** Shade trees provide fruits, lumber, and other fibers that can be sold in addition to the coffee, increasing the overall income security of the farmers. Because of their deep roots and energy stores, trees are more resilient to climate change, and are therefore better equipped than coffee to produce fruit in drought years, providing a reliable secondary source of income. Trees can also directly provide fruits, seeds, oils, fuelwood, and construction materials for household use, increasing the economic resilience of the farmers.¹⁶
-

⁵ Muschler, R. G. (2001). Shade improves coffee quality in a sub-optimal coffee-zone of Costa Rica. *Agroforestry systems*, 51(2), 131-139.

Vaast, P., Kanten, R. V., Siles, P., Dzib, B., Franck, N., Harmand, J. M., & Génard, M. (2005). Shade: a key factor for coffee sustainability and quality. In ASIC 2004. 20th International Conference on Coffee Science, Bangalore, India, 11-15 October 2004 (pp. 887-896). Association Scientifique Internationale du Café (ASIC).

⁶ Alemu, M. M. (2015). Effect of tree shade on coffee crop production. *Journal of Sustainable Development*, 8(9), 66.

Rathmell, L. (2017). *Coffee and Conservation: The Ecology and Marketing of Bird Friendly Coffee* (Doctoral dissertation).

⁷ Alemu, M. M. (2015). Effect of tree shade on coffee crop production. *Journal of Sustainable Development*, 8(9), 66.

⁸ Iijima, M., Izumi, Y., Yuliadi, E., Sunyoto, Afandi, & Utomo, M. (2003). Erosion control on a steep sloped coffee field in Indonesia with alley cropping, intercropped vegetables, and no-tillage. *Plant Production Science*, 6(3), 224-229.

⁹ Li, Xiang, Jianzhi Niu, and Baoyuan Xie. "The effect of leaf litter cover on surface runoff and soil erosion in Northern China." *PloS one* 9, no. 9 (2014): e107789.

¹⁰ Muñoz-Villers, Lyssette Elena, Josie Geris, María Susana Alvarado-Barrientos, Friso Holwerda, and Todd Dawson. "Coffee and shade trees show complementary use of soil water in a traditional agroforestry ecosystem." *Hydrology and Earth System Sciences* 24, no. 4 (2020): 1649-1668

¹¹ Rice, R. A. (2018). Coffee in the crosshairs of climate change: agroforestry as abatis. *Agroecology and Sustainable Food Systems*, 42(9), 1058-1076.

¹² Klein, A., I. Steffan-Dewenter and T. Tschardt, 2003b. Fruit set of highland coffee increases with the diversity of pollinating bees. *Proceedings of the Royal Society of London* 270:955-961

¹³ Greenberg, R., Bichier, P., Angon, A. C., & Reitsma, R. (1997). Bird Populations in Shade and Sun Coffee Plantations in Central Guatemala: Poblaciones de Aves en Plantaciones Cafetaleras en Sombra y Sol en la Región Central de Guatemala. *Conservation Biology*, 11(2), 448-459.

¹⁴ Wiryo et al. 2016. The diversity of plant species, the types of plant uses and the estimate of carbon stock in agroforestry system in Harapan Makmur Village, Bengkulu, Indonesia. *Biodiversitas* 17: 249-255

¹⁵ Roshetko et al. 2007. Smallholder Agroforestry Systems for Carbon Storage. *Mitigation and Adaptation Strategies for Global Change*. 12: 219-242

¹⁶ Davis, H., Rice, R., Rockwood, L., Wood, T., & Marra, P. (2019). The economic potential of fruit trees as shade in blue mountain coffee agroecosystems of the Yallahs River watershed, Jamaica WI. *Agroforestry Systems*, 93(2), 581-589.

PARTNERS

Conservation International

Conservation International (CI) works to protect the critical benefits that nature provides to people. Through science, partnerships and fieldwork, Conservation International is driving innovation and investments in nature-based solutions to the climate crisis, supporting protections for critical habitats, and fostering economic development that is grounded in the conservation of nature. Conservation International works in 30 countries around the world, empowering societies at all levels to create a cleaner, healthier and more sustainable planet.

Website: <https://www.conservation.org>

Blog: <https://www.conservation.org/blog>

Facebook: <https://www.facebook.com/conservation.intl>

Twitter: <https://twitter.com/ConservationOrg>

Instagram: <https://www.instagram.com/ConservationOrg/>

YouTube: <https://www.youtube.com/channel/UCam5sCp6mzGBcn8ZBB2RBJg>

The Sustainable Coffee Challenge

The Sustainable Coffee Challenge is a collaborative effort of companies, governments, NGOs, research institutions and others to transition the coffee sector to be fully sustainable. Challenge partners are urgently working together to increase transparency, align around a common vision for sustainability and collaborate to accelerate progress toward those goals.

Conceived by Conservation International and Starbucks and launched during the 2015 Paris climate meetings with 18 founding partners dedicated to coffee sustainability, the Challenge aims to stimulate greater demand for sustainable coffee. The movement has since grown to more than 160 partners.

Website: <https://www.sustaincoffee.org/>

Smithsonian Migratory Bird Center

The Smithsonian Migratory Bird Center (SMBC) is a scientific research organization dedicated to understanding, conserving and championing the grand phenomenon of bird migration. SMBC's pioneering, Bird Friendly® coffee certification is the gold standard in eco-friendly, organic coffee farming, and has supported over 20 years of research linking coffee agroforestry with biodiversity conservation. Bird Friendly certified farms retain significant canopy tree diversity, which protects critical habitat for migratory birds and other native wildlife.

Website: <https://nationalzoo.si.edu/migratory-birds/bird-friendly-coffee>

Facebook: <https://www.facebook.com/MigratoryBirdCenter>

Twitter: <https://twitter.com/SMBC>

World Coffee Research

World Coffee Research (WCR) is the only industry-guided organization in the world driving global collaborative agricultural research for coffee. We were formed by the world-wide coffee industry in 2012, with the recognition that innovation in coffee agriculture is necessary to deliver increased quality, reduce supply chain risk, and transform coffee producing into a profitable, sustainable livelihood that can meet rising demand while also safeguarding natural resources. WCR drives innovation for coffee agriculture in multiple, strategically targeted geographies. We professionalize nurseries and seed systems, conduct variety trials, and accelerate breeding system modernization to improve quality in the cup and to enable farmers to access better varieties for resilience and profitability in the face of threats like climate change. WCR research is executed in partnership with leading institutions in producing countries around the world.

Website: <https://worldcoffeeresearch.org>

Instagram: <https://www.instagram.com/wcoffeeresearch/>

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Acknowledgments

A special thanks to The Starbucks Foundation (<https://stories.starbucks.com/stories/the-starbucks-foundation/>) who provided financial support for the development of the Indonesian Shade Catalog.

Adi Nugroho from Vocational College, Gadjah Mada University, co-authored the catalog and conducted the Indonesian literature review and interviews with Indonesian coffee farmers and industry experts.

We wish to thank the following coffee industry and agroforestry experts from Indonesia for their knowledge and perspectives: Surip Mawardi, *Starbucks Farmer Support Center*; Anto Wagianto, *ECOM Agroindustrial Trading*; Ucu Sumirat, *Indonesia Coffee and Cocoa Research Institute*; Paramita Mentari Kesuma, *Sustainable Coffee Platform of Indonesia*; Endri Martini, *World Agroforestry (ICRAF)*, MS Hidayatullah, *Budidaya Agriculture Initiatives & OnCoffee Indonesia*; Arif Setyawan, *Swaraowa*; Isner Imanalu, *Conservation International Indonesia* and Benedictus, *Rainforest Alliance Indonesia*.

We wish to thank the following reviewers who improved the quality of the catalog: Endri Martini, *World Agroforestry (ICRAF)*; Deden Girmansyah, *Herbarium Bogoriense, Indonesian Institute of Science*; Benedictus, *Rainforest Alliance*; Dila Swestiani, *Agroforestry Research Centre, Ministry of Forestry*; Isner Manalu, *Conservation International*; Ridla Arifiana, *Gadjah Mada University*, Singgih Utomo, *Gadjah Mada University*; Ucu Sumirat, *ICCRI; SCOPI (NGO)*; Surip Mawardi, *Starbuck FSC*.

We thank the following coffee farmer group members for facilitating farm visits and providing knowledge: Ngatiman, Gunadi, Sriono Edi Subekti, Nopa Suryono, Suhanta, Rumini, Triyono, Isner, Sukar, Buchori, Adam Musi, Sutarjo, Faqih and Dulanser Siburian.

We wish to acknowledge the support provided by Royal Botanic Gardens, Kew and its collaborators for enabling the use of images and illustrations of these tree species.

Adelyn Hanchette conducted an English literature review of shade trees in Indonesian coffee plantations

DISTRIBUTION + CONTACT

This catalog is a critical tool for diversifying coffee agroforestry systems. We hope it is used by:

- Coffee producers
- Coffee organizations
- Coffee development or sustainability projects
- Lending institutions
- Others who are invested in coffee sustainability
- Others who are interested in the Indonesian Forest sector

Ideas for distributing the catalog:

If you are an organization that works with coffee sustainability, agroforestry or reforestation, we invite you to distribute this catalog throughout your network free of charge.

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Contact

Interested in learning more about the Shade Catalog or its contents? Or willing to support the next country edition? We'd love to hear from you! Reach us at: scc@conservation.org

Do you have images you would like to contribute? Please share via scc@conservation.org and your contribution will be acknowledged in the catalog.

KEY

COFFEE IMPACT

This section explains whether this tree helps facilitate yield, supports a healthy crop, reduces or impairs yield, etc.



**Beneficial to
Coffee**



**May Compete
With Coffee**

COFFEE SPECIES

Coffee species known to be planted in agroforestry systems with this tree.



Arabica



Robusta



Coffee
(Arabica and/or
Robusta)

CULTIVATION

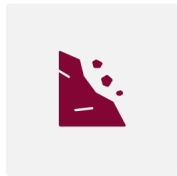


Planted



Natural

FARM SERVICES



Erosion Control



Coffee Shade



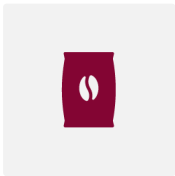
Soil Improvement



Nitrogen Fixation



Weed Control



Coffee
Productivity



Windbreak



Reforestation

FARMER USES



Food



Livestock Forage



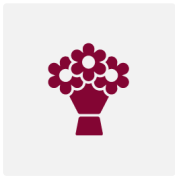
Fuelwood



Lumber



Medicinal



Ornamental

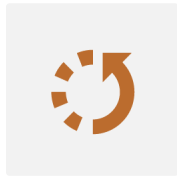


Product



Ceremonial

REGENERATION

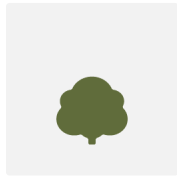


Regenerates
Naturally



Requires
Propagation

TREE HEIGHT



Shrub
1-10m



Small
10-20m



Medium
20-35m



Large
>35m

INDEX

Acacia mangium

1

Brown salwood, Akasia, Tongke Hutan



Robusta Arabica

Acrocarpus fraxinifolius

2

The Pink Cedar, Delimas, Madang pariek



Robusta

Aglaia argentea

3

Bayur, Tanglar, Selang (Javanese), Kakaduan (W. Javanese), Luka-lukam (Moluccas)



Robusta

Alangium kurzii

4

Melaku, Falame, Kayu Musang (Sumatra), Ki Careuh (Java)



Robusta

Biodiversity Benefits

Albizia chinensis

5

The Sau Tree, Sengon



Robusta Arabica

Biodiversity Benefits

Aleurites moluccanus

6

Candlenut, Kemiri, Miri (Javanese), Kemintan, Muncang (W. Javanese/Sudanese)



Robusta Arabica

Biodiversity Benefits

Alstonia angustiloba

7

Pulai, Pulai hitam, Pulai darat (Java)



Robusta Arabica

Alstonia scholaris

8

Devil's Tree, Pulai, Pule (Javanese), Rite (Ambon), Pulai gading



Robusta Arabica

Biodiversity Benefits

Anacardium occidentale

9

Cashew, Jambu mete, Jambu monyet



Robusta Arabica

Biodiversity Benefits

Annona muricata

10

Soursop, Sirsak, Nangka Belanda, Nangka Seberang (Javanese)



Robusta Arabica

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22



Robusta



Coffee

Baccaurea racemosa

Menteng, Engkumi, Kayu masam, Kokonau, Kunau, Kunyi, Longkumo, Moho liox, Tunding Undang, Umbarian (Borneo); Roesip, Kisip (Sumatra), Kapundung

23



Coffee

Bambusa vulgaris (and other Bambusa sp.)

Common bamboo, Bambu ampel, Bambu kuning, Domar (Ambonese)

24



Robusta



Arabica



Biodiversity Benefits

Bischofia javanica

Java cedar, Gadog, Gintungan (Javanese), Kerinjing (Sumatera), Sikkam

25



Robusta



Biodiversity Benefits

Bouea macrophylla

Plum Mango, Gandaria, Ramanian (Sumatra)

26



Robusta



Arabica



Biodiversity Benefits

Calliandra houstoniana

Calliandra, Kaliandra

27



Robusta



Biodiversity Benefits

Carallia brachiata

Corkybark, Perepat Hutan, Ampana, Aroi, Aru, Bara, Belengkeching, Bepinang, Beranggae, Dabong, Ganggang putih, Kelai, Kitir-kitir, Massulie, Mundar, Mundar burung, Pacar, Petis, Rabong, Sawar bubu, Selunser, Tampilas, Tulang ular (Borneo), Manggisan

28



Robusta

Carica papaya

Papaya, Pepaya, Telo Gantung, Kates (Javanese), Gedang (Sundanese)

29



Robusta



Arabica



Biodiversity Benefits

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Kapok Tree, Kapuk randu, Randu, Kapas

30



Robusta



Arabica



Biodiversity Benefits

Ceodes umbellifera

Birdlime tree, Ki cau

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Robusta

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 Robusta  Arabica

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 Robusta  Arabica

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Lime, Jeruk Nipis, jeruk pecel




 Robusta  Arabica

Citrus aurantium

35

Tangor, Bitter Orange, Jeruk siam, Jeruk manis



 Robusta  Arabica

Citrus hystrix

36

Kaffir Lime, Jeruk Purut



 Robusta  Arabica

Citrus maxima

37

Pomelo, Jeruk bali




 Robusta  Arabica

Citrus medica

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Citron, Jeruk sukade, Sitrun





 Robusta  Arabica

Cocos nucifera

39

Coconut, Kelapa





 Robusta  Arabica

Cordyline fruticosa

40

Ti plant, Jeluang, Hanjuang, Puding merah





 Robusta  Arabica

Dalbergia latifolia

41

Black Rosewood, Sonokeling, Sonosungu



 Robusta  Arabica


























































Dendrocalamus asper































































42

Giant bamboo, Bambu petung, Awi bitung (Sundanese), Buluh batang (Batak), Pring Petung (Javanese)



 Robusta  Arabica

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Robusta

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67

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Robusta

Horsfieldia grandis

68

Deraya, Dara-dara, Kumpang, Kumpang api, Pendarahan (Borneo)



Coffee

Indigofera sp.

69



Robusta

Lansium domesticum

70

Longkong, Duku, Langsung, Pisitan, Kokosan



Robusta Arabica

Biodiversity Benefits

Leucaena cultivars (diversifolia, leucocephala, and hybrids)

71

River Tamarind, Lamtoro, Lamtoro PG 79, Mlanding (Javanese), Pelending (Sundanese), Pete selong (Sundanese)



Robusta Arabica

Biodiversity Benefits

Liquidambar excelsa

72

Rasamala



Robusta

Litsea noronhae

73

Medang klemah, Kihuru, Wuruh kembang



Coffee

Biodiversity Benefits

Macaranga tanarius

74

Hairy Mahang, Calik angin, Tutup Ancur (Javanese), Mapu (Batak), Mara (Sundanese), Mahang, Tutup (C. Javanese)



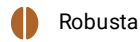
Robusta

Biodiversity Benefits

Macaranga triloba

Mahang Damar

75

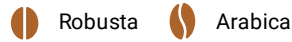


✓ Biodiversity Benefits

Maesopsis eminii

Umbrella Tree, Kayu afrika, Trembelu (Javanese)

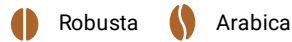
76



Magnolia champaca

Champak, Cempaka, Semulun

77



✓ Biodiversity Benefits

Magnolia tsiampacca

Wau beech, Cempaka hutan halus, Aran, Arau, Arau sejam, Maharu, Medang, Miharo, Minag, Miwi, Sempaka, Talak Uma (Borneo)

78



✓ Biodiversity Benefits

Magnolia vrieseana

Cempaka hutan kasar, Uru

79



✓ Biodiversity Benefits

Mangifera caesia

Jack, White Mango, Binjai, Binglu (Sundanese), Wani (Balinese)

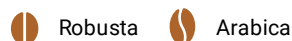
80



Mangifera foetida

Horse Mango, Bacang, Limus (Sundanese), Asem Hambawang (Banjar, South Kalimantan), Pakel (Javanese)

81

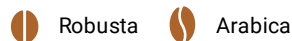


✓ Biodiversity Benefits

Mangifera indica

Mango, Mangga, Pelem (Javanese), Buah (Sundanese)

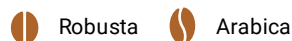
82



Mangifera odorata

Saipan Mango, Kweni, Bembem, Kaweni (Sundanese, West Java)

83



Mangifera pajang

Asam Payang, Bambang (Borneo)

84




✓ Biodiversity Benefits

Melia azedarach

85

White Cedar, Mindi, Marambung (Sumatra)





 Robusta

Morinda citrifolia

86

Noni, Mengkudu, Bengkudu (Minahasa, Gorontalo), Cangkudu (Sundanese). Mengkudu besar, Mengkudu jantan (Malaysia)



 Robusta  Arabica

Moringa oleifera

87

Moringa Tree, Ben-oil Tree, Horseradish Tree, Cabbage Tree, Kelor



 Coffee



 Biodiversity Benefits

Musa sp.

88

Banana, Pisang




 Robusta  Arabica

Myristica fragrans

89

Nutmeg, Pala





 Robusta

Neolamarckia cadamba

90

Common burflower, Jabon





 Robusta  Arabica

Nephelium lappaceum

91

Rambutan, Rambutan




 Robusta  Arabica

Octomeles sumatrana

92

Binuang



 Robusta



 Biodiversity Benefits

Palaquium obovatum

93

Gutta-percha Tree, Nyatoh



 Robusta  Arabica



 Biodiversity Benefits

Pandanus amaryllifolius

94

Fragrant screw pine, Pandan, Pandan rampe (Sundanese), Pondak (Moluccas)




 Robusta  Arabica

Pandanus tectorius

95

Screwpine, Pandan Tikar, Pandan Duri



 Robusta

Pangium edule

96

Keluwak , Kepayang, Picung (Sundanese), Pucung (Javanese)



Robusta

Paraserianthes lophantha

97

Crested wattle, Kemlandingan gunung, Kayu waek (Flores), Mlandingan Gunung (Javanese), Ki haruman (Sundanese)



Arabica

Parashorea lucida

98

White meranti, Angkola , Gendala (Javanese), Hares (Moluccas)



Robusta

Parkia speciosa

99

Bitter bean, Petai, Pete (Javanese)



Robusta Arabica

Biodiversity Benefits

Peronema canescens

100

Sungkai, Julu-julu hantu (borneo)



Robusta

Persea americana

101

Avocado, Alpukat



Robusta Arabica

Phyllanthus acidus

102

Star gooseberry, Cermai bogor, Ceremai, Caramele (Southern Sulawesi)



Robusta Arabica

Pinus merkusii

103

Merkus Pine, Pinus



Robusta Arabica

Psidium guajava

104

Guava, Jambu Biji, Jambu Kluthuk (javanese)



Robusta Arabica

Biodiversity Benefits

Pterospermum javanicum

105

Bayur



Robusta Arabica

Quercus sundaica/ Lithocarpus sundaicus

106

Pasang, Brangan pili, Empenit, Empili, Mempening, Mengkikir, Salud birar (Borneo), Pasang balung (Java)



Robusta

Salacca zalacca

107

Salak Palm, Salak



Robusta



Arabica

Sandoricum koetjape

108

Kechapi, Kecapi, Ketapi



Coffee

Schima wallichii

109

Needlewood, Puspa



Robusta

Schizostachyum brachycladum

110

Sacred bali bamboo, Bambu talang, Buluh tolang (North Sumatra), Buluh Sero (Moluccas)



Robusta

Shorea assamica

111

Meranti White, Meranti putih



Robusta

Shorea javanica

112

White Meranti, Damar, Damar Mata Kucing (Southern Sumatra), Damar Sibolga (Northern Sumatra)



Robusta



Arabica



Biodiversity Benefits

Shorea platyclados

113

Meranti bukit, Banio (Sumatra), Ketir (South Kalimantan), Meranti cingham (Eastern Sumatra)



Robusta



Arabica

Shorea sumatrana

114

Tengkawang



Robusta

Styrax benzoin

115

Benzoin, Gum Benjamin, Kemenyan



Coffee



Biodiversity Benefits

Swietenia macrophylla

116

Mahogany, Mahoni



Robusta



Arabica



Biodiversity Benefits

Swietenia mahagoni

117

Mahogany, Mahoni



Robusta



Arabica



Biodiversity Benefits

Syzygium aqueum

118

Water apple, Jambu air


 Robusta
  Arabica
 Biodiversity Benefits***Syzygium aromaticum***

119

Clove, Cengkeh


 Robusta
  Arabica
Syzygium cerasifforme


120

Common kelat, Salam, Nagasari, Ki sireum, Gelam (Javanese)

 Coffee***Syzygium malaccense***


121

Malay Apple, Jambu bol


 Robusta
  Arabica
Syzygium polyanthum

122

Indonesian bay leaf, Salam, Manting (Javanese), Ubar Serai (Sumatra)

 Robusta Biodiversity Benefits***Syzygium polycephalum***


123

Gowok, Kupa

 Coffee***Tectona grandis***

124

Teak, Jati


 Robusta
  Arabica
Theobroma cacao



125

Cocoa, Kakao, Coklat


 Robusta
  Arabica
 Biodiversity Benefits***Toona sinensis***

126

Red Cedar, Surian, Ingul (sumatra)


 Robusta
  Arabica
Toona sureni

127

Red Cedar, Surian, Surian amba (Sumatra), Suren


 Robusta
  Arabica



TREE SPECIES (SCIENTIFIC NAME)

Acacia mangium

ENGLISH COMMON NAME

Brown salwood

INDONESIAN COMMON NAME

Akasia, Tongke Hutan

TREE FAMILY

FABACEAE

AVERAGE LEAF SIZE (CM)

25cm × **6.75cm**
Length Width

ELEVATIONAL RANGE (M)

0-800m

TREE HEIGHT

MEDIUM (20-35M)



DISTRIBUTION

NATIVE TO INDONESIA

NATIVE TO

Region: Asia, Oceania

Papua New Guinea

Indonesia: Maluku Islands, New Guinea, Sumatra

EXOTIC IN

SE Asia: Malaysia, Philippines, Singapore, Vietnam

Indonesia: Borneo, Lesser Sunda Islands

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM

ROBUSTA **ARABICA**

COFFEE IMPACT

BENEFICIAL TO COFFEE

REGENERATION

REGENERATES NATURALLY

CULTIVATION

PLANTED

PREVALENCE

COMMON IN COFFEE AGROFORESTRY

TREE MANAGEMENT

Propagated by seed (direct sowing or nursery), air layering, cuttings, grafting and tissue culture. Regenerates naturally in clear-cut and burned areas. Plant at spacing of 2 m x 2m to 2.5 m x 2.5 m. Prune twice to a height of 6 m and prune persistent branches if objective is to produce quality timber. Pruning branches with a diameter of >2 cm makes the tree susceptible to infections (especially heart rot). Thinning for pulpwood production is aimed at achieving a final stock of 600-700 stems/ha from the 1250 trees/ha planted and is done after 18 months. Grows rapidly (~3 m in first year), but growth declines rapidly after 7 or 8 years. Requires high amounts of water and nutrition resources. Has allelopathic effects which may negatively impact coffee growth. Highly invasive outside native range.

TREE BENEFITS AND USES

FARMER USES



Livestock Forage, Fuelwood, Lumber, Ornamental

Wood is used for construction, boat building, furniture and cabinet-making, veneer, and particle board. The pulp is readily bleached to high brightness levels and is excellent for paper making. This species is used for soil improvement, as a firebreak, and the leaves may serve as forage for cattle.

FARM SERVICES



Windbreak, Soil Improvement, Erosion Control, Nitrogen Fixation

BIODIVERSITY BENEFITS

Unknown

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TREE SPECIES (SCIENTIFIC NAME)

Acrocarpus fraxinifolius

ENGLISH COMMON NAME

The Pink Cedar

INDONESIAN COMMON NAME

Delimas, Madang pariek

TREE FAMILY

FABACEAE

AVERAGE LEAF SIZE (CM)

8.5cm × **30cm**
Length Width

ELEVATIONAL RANGE (M)

0-1500M

TREE HEIGHT

LARGE (> 35M)



DISTRIBUTION

EXOTIC IN INDONESIA

NATIVE TO

Region: Asia
Laos, Myanmar, Thailand, Vietnam

EXOTIC IN

Indonesia: Java, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM

ROBUSTA

COFFEE IMPACT

Unknown

REGENERATION

REGENERATES NATURALLY

CULTIVATION

PLANTED

TREE MANAGEMENT

Regenerates naturally on burned or newly exposed soils. Periodic weeding required until well established as saplings. Thinning should first be performed 3-4 years after initial planting then continuously until the stand is well developed as the tree requires a large crown for optimal growth. Competes with other crops. Should not be planted near houses as dry branches drop off

PREVALENCE

COMMON IN COFFEE AGROFORESTRY

TREE BENEFITS AND USES

FARMER USES



Livestock Forage, Fuelwood, Lumber

The wood is heavy, moderately hard, and compact with its whitish sapwood and bright red to brownish-red heartwood making it very decorative. The wood is not very durable and is prone to attack by fungi and insects, but it is easy to work with tools and is well suited for wood crafts, general construction, furniture, shingles, and beehive frames. The foliage can be used as livestock fodder.

FARM SERVICES



Coffee Shade, Windbreak, Soil Improvement, Erosion Control, Reforestation, Nitrogen Fixation

Erosion control: recommended for reinforcing riverbanks and stabilizing terraces

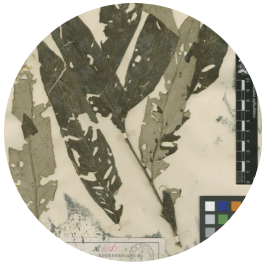
Soil improvement: leaves are suitable for mulching

BIODIVERSITY BENEFITS

Unknown

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Image: <http://specimens.kew.org/herbarium/K000789066> The Herbarium Catalogue, Royal Botanic Gardens, Kew. Published on the Internet <http://www.kew.org/herbcat> [accessed on 10 12 2020].



TREE SPECIES (SCIENTIFIC NAME)

Aglaia argentea

INDONESIAN COMMON NAME

Bayur, Tanglar, Selang (Javanese), Kakaduan (W. Javanese), Luka-lukam (Moluccas)

TREE FAMILY

MELIACEAE

AVERAGE LEAF SIZE (CM)

64.5cm × **44.5cm**
Length Width

DISTRIBUTION



NATIVE TO INDONESIA

ELEVATIONAL RANGE (M)

0–1300M

TREE HEIGHT

MEDIUM (20–35M)



NATIVE TO

Region: Asia, Oceania

Malaysia, Papua New Guinea, Philippines, Singapore, Thailand, Vietnam

Indonesia: Borneo, Java, Lesser Sunda Islands, Maluku Islands, New Guinea, Sulawesi, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM



ROBUSTA

COFFEE IMPACT

Unknown

TREE MANAGEMENT

Pollinated by insects. A common tree in regenerating forest. This suggests the plant has good potential as a pioneer species for restoring native woodland

REGENERATION



REGENERATES NATURALLY

CULTIVATION

PREVALENCE



COMMON IN COFFEE AGROFORESTRY

TREE BENEFITS AND USES

FARMER USES



Food, Fuelwood, Lumber, Medicinal

The fruit is eaten raw. The plant is used in the treatment of feverish illnesses and in preparations to treat leprosy.

FARM SERVICES

Unknown

BIODIVERSITY BENEFITS

Unknown

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TREE SPECIES (SCIENTIFIC NAME)

Alangium kurzii

INDONESIAN COMMON NAME

Melaku, Falame, Kayu Musang (Sumatra), Ki Careuh (Java)

TREE FAMILY

CORNACEAE

AVERAGE LEAF SIZE (CM)

13cm × **8cm**

Length Width

ELEVATIONAL RANGE (M)

600–1600m

TREE HEIGHT

MEDIUM (20–35M)



DISTRIBUTION



NATIVE TO INDONESIA

NATIVE TO

Region: Asia

Laos, Malaysia, Myanmar, Singapore, Thailand, Vietnam

Indonesia: Borneo, Java, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM



ROBUSTA

COFFEE IMPACT



MAY COMPETE WITH COFFEE

TREE MANAGEMENT

Fast growing species often planted around the farm perimeter

REGENERATION



REGENERATES NATURALLY

CULTIVATION



PLANTED

PREVALENCE

Unknown

TREE BENEFITS AND USES

FARMER USES



Fuelwood, Lumber

FARM SERVICES



Erosion Control, Unknown

BIODIVERSITY BENEFITS

✓ **YES**

Fruits eaten by civets and birds. Perching tree for birds and macaques.

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TREE SPECIES (SCIENTIFIC NAME)

Albizia chinensis

ENGLISH COMMON NAME

The Sau Tree

INDONESIAN COMMON NAME

Sengon

TREE FAMILY

FABACEAE

AVERAGE LEAF SIZE (CM)

0.8cm × **0.225cm**
Length Width

ELEVATIONAL RANGE (M)

0-1800M

TREE HEIGHT

MEDIUM (20-35M)



DISTRIBUTION

NATIVE TO INDONESIA

NATIVE TO

Region: Asia

Cambodia, Laos, Myanmar, Papua New Guinea, Philippines, Thailand, Vietnam

Indonesia: Borneo, Java, Lesser Sunda Islands, New Guinea, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM

ROBUSTA **ARABICA**

COFFEE IMPACT

BENEFICIAL TO COFFEE

REGENERATION

Unknown

CULTIVATION

PLANTED

TREE MANAGEMENT

Propagated by seed. Seed dormancy can be broken by scarification or soaking seed in concentrated sulphuric acid for 10 minutes then washing and soaking in water for 18 hours. Transplant seedlings after 6-8 weeks. Space at 330/ha for shade. Plant the same year as the coffee seedlings. Weed until the plants reach a height of 1 m. Trees grown for shade can be allowed to grow ~7 m tall and then should be cut back to 4 m. Early growth can be promoted with a mixture of 60% lime, 30% superphosphate, and 10% urea mixed with the soil in each planting hole at time of planting. Tolerates frequent pruning. Trees can be harvested for fodder twice a year during the growing season by cutting the stem back to 1 m.

PREVALENCE

COMMON IN COFFEE AGROFORESTRY

TREE BENEFITS AND USES

FARMER USES



Livestock Forage, Fuelwood, Lumber

The wood is used to make light furniture, tea chests, and veneers. The tree is used for shade, to restore soil nutrients as fertilizer, and as protection for coffee plants. The leaves are readily eaten by goats.

FARM SERVICES



Coffee Shade, Soil Improvement, Nitrogen Fixation

Coffee shade: does not provide shade until fourth year

BIODIVERSITY BENEFITS

YES

Used by Javan loris when moving through the canopy. Used as perching tree for macaques.

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TREE SPECIES (SCIENTIFIC NAME)

Aleurites moluccanus

ENGLISH COMMON NAME

Candlenut

INDONESIAN COMMON NAME

Kemiri, Miri (Javanese), Kemintan, Muncang (W. Javanese/Sudanese)

TREE FAMILY

EUPHORBIACEAE

AVERAGE LEAF SIZE (CM)

17.5cm × **9cm**
Length Width

DISTRIBUTION

NATIVE TO INDONESIA

ELEVATIONAL RANGE (M)

0-1200M

TREE HEIGHT

LARGE (> 35M)



NATIVE TO

Region: Asia, Oceania

Cambodia, Malaysia, Myanmar, Papua New Guinea, Philippines, Singapore, Thailand, Vietnam

Indonesia: Borneo, Java, Lesser Sunda Islands, New Guinea, Sulawesi, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM

ROBUSTA **ARABICA**

COFFEE IMPACT

MAY COMPETE WITH COFFEE

TREE MANAGEMENT

Naturally propagated seedlings can be collected and transplanted, or it can be propagated by seed and air layering. Few input requirements once established. Fast growing and a good pioneer species to reclaim land after shifting cultivation practice. Leaves are renewed regularly and old leaves left on the soil rot and enrich the soil with organic matter and nutrients. Long lived tree.

REGENERATION

REGENERATES NATURALLY

CULTIVATION

PLANTED

PREVALENCE

COMMON IN COFFEE AGROFORESTRY

TREE BENEFITS AND USES

FARMER USES



Food, Lumber, Medicinal, Product

Fruits eaten and used to produce oil, spices, and seasoning. Oil from the fruit is an alternative source of bio-diesel, and Indonesian Bio-diesel Institute is exploring commercial uses. The seed is used as a laxative, pulped kernels are used in poultices to treat headache, fevers, ulcers, swollen joints and constipation. The bark is used to treat dysentery and the bark sap is mixed with coconut milk to treat stomach problems. Leaves are used to treat tuberculosis of the neck, headaches and gonorrhoea. Oil is also used in the batik industry and cosmetics, and the oily kernels can be burnt or made into candles. The "nut" (seed) is used in a gambling game in which the objective is to break the opponent's nut by hitting it with one's own with a special cultivar in Indonesia supplying oval, thick-walled nuts for this game ('kemiri pidak', 'muncang kelenteng'). The tree is also used to make dye and its wood used to make furniture, small utensils, and matches where it is abundant.

FARM SERVICES



Reforestation, Weed Control

BIODIVERSITY BENEFITS

YES

Birds nest in this tree

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TREE SPECIES (SCIENTIFIC NAME)

Alstonia angustiloba

ENGLISH COMMON NAME

Pulai

INDONESIAN COMMON NAME

Pulai hitam, Pulai darat (Java)

TREE FAMILY

APOCYNACEAE

AVERAGE LEAF SIZE (CM)

13cm × **4.5cm**
Length Width

DISTRIBUTION

 **NATIVE TO INDONESIA**

ELEVATIONAL RANGE (M)

0–200m

TREE HEIGHT

LARGE (> 35M)



NATIVE TO

Region: Asia

Malaysia, Thailand

Indonesia: Borneo, Java, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM

 **ROBUSTA**  **ARABICA**

COFFEE IMPACT

Unknown

TREE MANAGEMENT

Occurs on a wide variety of soils and is common in mixed dipterocarp forest on low hills and undulating land, and in freshwater swamp forest up to 200 m altitude. It becomes abundant in secondary forest. Fast-growing and light demanding. Can be propagated by cuttings.

REGENERATION

Unknown

CULTIVATION

 **PLANTED**

PREVALENCE

 **COMMON IN COFFEE AGROFORESTRY**

TREE BENEFITS AND USES

FARMER USES



Fuelwood, Lumber, Medicinal

The stem, latex, and leaves are used to treat gynecological problems and skin sores, the leaves are externally applied to the spleen area to treat remittent fever, and the bark is pounded to make an extract used as an ingredient of fever reducing and antiparasitic drugs.

FARM SERVICES

Unknown

BIODIVERSITY BENEFITS

Unknown

Last Updated: April 26, 2021



TREE SPECIES (SCIENTIFIC NAME)

Alstonia scholaris

ENGLISH COMMON NAME

Devil's Tree

INDONESIAN COMMON NAME

Pulai, Pule (Javanese), Rite (Ambon), Pulai gading

TREE FAMILY

APOCYNACEAE

AVERAGE LEAF SIZE (CM)

17cm × **5.75cm**
Length Width

DISTRIBUTION



NATIVE TO INDONESIA

ELEVATIONAL RANGE (M)

0-1250m

TREE HEIGHT

LARGE (> 35M)



NATIVE TO

Region: Asia, Oceania

Cambodia, Laos, Malaysia, Myanmar, Papua New Guinea, Philippines, Singapore, Thailand, Vietnam

Indonesia: Borneo, Java, Lesser Sunda Islands, Maluku Islands, New Guinea, Sulawesi, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM

ROBUSTA **ARABICA**

COFFEE IMPACT

Unknown

TREE MANAGEMENT

Seeds dispersed by wind and pollinated by insect. Regular watering during dry season is essential for good growth and deep mulch is beneficial to young trees. Reaches max height of 35 m at ~40 years of age. Preferred soils include alluvia, basaltic red earth, yellow earth with grey-brown topsoil, stony red earth on basic volcanic soils, sandy grey earth, brown earth from a volcanic mixture of rocks and soils derived from metamorphic rocks.

REGENERATION

REGENERATES NATURALLY

CULTIVATION

PREVALENCE

COMMON IN COFFEE AGROFORESTRY

TREE BENEFITS AND USES

FARMER USES



Lumber, Medicinal

A decoction of the bark is used as a tonic, to reduce fever, to stimulate menstrual discharge, to heal wounds, in treatment of abdominal pains, and has proved a valuable remedy for chronic diarrhea and the advanced stages of dysentery. The leaves are used for treating thiamine (vitamin B1) deficiencies, edema (swelling caused by fluid retention), and congested liver, and the latex for treating neuralgia (shooting pain due to nerve damage), toothache, and is applied to ulcers and used to treat rheumatic pains. The wood was formerly used for school blackboards, hence the name 'scholaris'. Wood used for making sculptures.

FARM SERVICES

Unknown

BIODIVERSITY BENEFITS

YES

Wild bees nest in large branches

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TREE SPECIES (SCIENTIFIC NAME)

Anacardium occidentale

ENGLISH COMMON NAME

Cashew

INDONESIAN COMMON NAME

Jambu mete, Jambu monyet

TREE FAMILY

ANACARDIACEAE

AVERAGE LEAF SIZE (CM)

20cm × **15cm**
Length Width

DISTRIBUTION

 **EXOTIC IN INDONESIA**

ELEVATIONAL RANGE (M)

0-1000m

TREE HEIGHT

SHRUB (1-10M)



NATIVE TO

Region: Americas

EXOTIC IN

SE Asia: Laos, Malaysia, Myanmar, Singapore, Taiwan, Thailand, Vietnam
Indonesia: Java, Lesser Sunda Islands, Sulawesi, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM

 **ROBUSTA**  **ARABICA**

COFFEE IMPACT

Unknown

TREE MANAGEMENT

Planted at 2-3 m spacing within the row and 12-15 m spacing between the rows. Withstands dry periods and poor soil. During the dry months, weeding is necessary. Fertilizer recommended and pests/diseases management may be necessary after trees start producing fruit. Removal of dead/diseased branches necessary. Thinning should be done after ~5 years and lower branches can be pruned. Long lived tree.

REGENERATION

Unknown

CULTIVATION

 **PLANTED**

PREVALENCE

Unknown

TREE BENEFITS AND USES

FARMER USES



Food, Fuelwood, Medicinal, Product

The tree produces tannin, fruit, nuts, oil, and spice. The cashew apple is eaten fresh or mixed in fruit salads, a drink is prepared from the juice, and young leaves and shoots are eaten raw or cooked. Treats ailments of the skin, and is used for mouth washes and laxatives.

FARM SERVICES



Erosion Control, Unknown

BIODIVERSITY BENEFITS

 **YES**

Flowers attract insects.

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TREE SPECIES (SCIENTIFIC NAME)

Annona muricata

ENGLISH COMMON NAME

Soursop

INDONESIAN COMMON NAME

Sirsak, Nangka Belanda, Nangka Seberang (Javanese)

TREE FAMILY

ANNONACEAE

AVERAGE LEAF SIZE (CM)

12cm × **5cm**
Length Width

DISTRIBUTION

 **EXOTIC IN INDONESIA**

ELEVATIONAL RANGE (M)

0-1000m

TREE HEIGHT

SHRUB (1-10M)



NATIVE TO

Region: Americas

EXOTIC IN

SE Asia: Papua New Guinea, Vietnam

Indonesia: Java, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM

 **ROBUSTA**  **ARABICA**

COFFEE IMPACT

Unknown

REGENERATION

 **REQUIRES PROPAGATION**

CULTIVATION

 **PLANTED**

TREE MANAGEMENT

Propagated by seed, budding, and grafting. Cutting out competing twigs as early as possible is necessary to limit the tree to a single trunk. Moderate application of fertilizer and manure can increase fruit production and improve growth rate. Tolerates dry soil conditions but prolonged drought causes shedding of leaves. Benefits from supplementary irrigation. Area around base of trees should be weeded or covered with mulch to avoid dehydration of shallow roots in dry season. Long lived tree.

PREVALENCE

 **COMMON IN COFFEE AGROFORESTRY**

TREE BENEFITS AND USES

FARMER USES



Food, Medicinal, Product

Produces dye. The fruit is a good source of Vitamin C and can be consumed fresh for dessert when fully ripe or mixed with ice cream or milk to make a delicious drink used as a stimulant. Leaves used medicinally.

FARM SERVICES

Unknown

BIODIVERSITY BENEFITS

Unknown

Last Updated: April 26, 2021

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TREE SPECIES (SCIENTIFIC NAME)

Archidendron microcarpum

INDONESIAN COMMON NAME

Kabau, Balinag, Girik, Jaring burung, Jaring hutan, Jering, Langir Hantu, Piling, Tionggong (Borneo)

TREE FAMILY

FABACEAE

AVERAGE LEAF SIZE (CM)

8.75cm × **4cm**
Length Width

DISTRIBUTION



NATIVE TO INDONESIA

ELEVATIONAL RANGE (M)

0-1200M

TREE HEIGHT

MEDIUM (20-35M)



NATIVE TO

Region: Asia

Malaysia, Singapore

Indonesia: Borneo, Sulawesi, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM

ROBUSTA **ARABICA**

COFFEE IMPACT

BENEFICIAL TO COFFEE

TREE MANAGEMENT

Seeds dispersed by animals. Tree of primary or mature secondary forest.

REGENERATION

REGENERATES NATURALLY

CULTIVATION

PREVALENCE

Unknown

TREE BENEFITS AND USES

FARMER USES



Food, Lumber

Its wood is soft, white, and only used locally for building purposes. The strong-smelling pods are used for seasoning food. The shoots and roots are prescribed against itch and the pounded leaves are used for rubbing the skin of patients suffering from smallpox.

FARM SERVICES



Coffee Shade, Nitrogen Fixation

BIODIVERSITY BENEFITS

Unknown

Last Updated: February 17, 2021

Image: <http://specimens.kew.org/herbarium/K000813142> The Herbarium Catalogue, Royal Botanic Gardens, Kew. Published on the Internet <http://www.kew.org/herbcat> [accessed on 10 12 2020].



TREE SPECIES (SCIENTIFIC NAME)

Archidendron pauciflorum

ENGLISH COMMON NAME

Jengkol

INDONESIAN COMMON NAME

Jengkol, Jering

TREE FAMILY

FABACEAE

AVERAGE LEAF SIZE (CM)

20-22cm × **5-7cm**
Length Width

DISTRIBUTION



NATIVE TO INDONESIA

ELEVATIONAL RANGE (M)

0-1600m

TREE HEIGHT

SMALL (10-20M)



NATIVE TO

Region: Asia

Philippines

Indonesia: Java, Lesser Sunda Islands, Sulawesi, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM

ROBUSTA **ARABICA**

COFFEE IMPACT

BENEFICIAL TO COFFEE

TREE MANAGEMENT

Fast growing and early fruiting. Long lived tree

REGENERATION

REGENERATES NATURALLY

CULTIVATION

PLANTED

PREVALENCE

COMMON IN COFFEE AGROFORESTRY

TREE BENEFITS AND USES

FARMER USES



Food, Fuelwood, Lumber, Medicinal, Product

Produces tannins. Seeds, fruit, and vegetable are used and consumed and can be sold at local market.

FARM SERVICES



Coffee Shade, Nitrogen Fixation

BIODIVERSITY BENEFITS

YES

Used by Javan Loris as sleeping tree and for connectivity. Used for foraging and perching by many bird species.

Last Updated: April 28, 2021

Image: Isner Manalu



TREE SPECIES (SCIENTIFIC NAME)

Areca catechu

ENGLISH COMMON NAME

Betelnut palm

INDONESIAN COMMON NAME

Pinang, Jambe (Javanese, Sundanese), Pua (Lesser Sunda Islands, the Moluccas)

TREE FAMILY

ARECACEAE

AVERAGE LEAF SIZE (CM)

52.5cm × 5cm
Length Width

ELEVATIONAL RANGE (M)

0-900m

TREE HEIGHT

MEDIUM (20-35M)



DISTRIBUTION

EXOTIC IN INDONESIA

NATIVE TO

Region: Asia
Philippines

EXOTIC IN

SE Asia: Cambodia, Laos, Malaysia, Papua New Guinea, Singapore, Thailand, Vietnam

Indonesia: Borneo, Java, Lesser Sunda Islands, Maluku Islands, New Guinea, Sulawesi, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM

ROBUSTA ARABICA

COFFEE IMPACT

Unknown

REGENERATION

REGENERATES NATURALLY

CULTIVATION

PLANTED

PREVALENCE

COMMON IN COFFEE AGROFORESTRY

TREE MANAGEMENT

Propagated exclusively by seed but can collect seedlings from fruits dropped by bats and squirrels and raise them into mature palms. Sow mature seeds as whole fruits directly after harvesting or after a few days of drying in semi-shade. Germinates after about 90 days. Select seeds from tree that bears fruit early and regularly, has a large number of leaves on the crown, and has high fruit set. Select fruits that are fully mature and float vertically in water with the top end upward. Seedlings require shade. At 12-24 months plants with five or more leaves can be planted with a ball of earth adhering to the roots. Plant at a depth of about 90 cm in well-drained soils. Requires regular weeding and mulching. Irrigation used in some drier areas and usually cultivated around homes and along upland farm borders. It requires a high, well-distributed annual rainfall of 1500-5000 mm.

TREE BENEFITS AND USES

FARMER USES



Food, Medicinal, Ornamental, Product, Ceremonial

The betel nut is chewed as mild stimulant, contains a large quantity of tannin and oils, and can be sold at market. The nut is applied externally to ulcers, sores, wounds, swellings and skin diseases, and it is used as an antiparasitic for humans and animals, to stimulate menstrual discharge, as a cure for diarrhea, urinary disorders, edema (swelling caused by fluid retention), and low back pain. The fragrant flowers are used in weddings and funerals, its wood used for fencing, and the tree used as a garden accessory.

FARM SERVICES

Unknown

BIODIVERSITY BENEFITS

Unknown

Last Updated: February 17, 2021

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TREE SPECIES (SCIENTIFIC NAME)

Arenga pinnata

ENGLISH COMMON NAME

Sugar Palm

INDONESIAN COMMON NAME

Aren, Enau, Kawung

TREE FAMILY

ARECACEAE

AVERAGE LEAF SIZE (CM)

900cm × **9.5cm**
Length Width

ELEVATIONAL RANGE (M)

0-1400M

TREE HEIGHT

SMALL (10-20M)



DISTRIBUTION



NATIVE TO INDONESIA

NATIVE TO

Region: Asia

Cambodia, Malaysia, Myanmar, Philippines, Singapore, Thailand

Indonesia: Borneo, Sulawesi, Sumatra

EXOTIC IN

SE Asia: Papua New Guinea

Indonesia: Java, Lesser Sunda Islands, Maluku Islands, New Guinea

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM

ARABICA **COFFEE**

COFFEE IMPACT

Unknown

REGENERATION

REGENERATES NATURALLY

CULTIVATION

PLANTED

PREVALENCE

COMMON IN COFFEE AGROFORESTRY

TREE MANAGEMENT

Propagated by seed planted directly but sometimes wild seedlings are collected and transplanted. Young trees require shade and wind-breaks may be needed in exposed sites to prevent breakage of leaves. Plant at 6-7 m or about 250 trees/ha. Tree reaches full size in 6-15 years. Fibers can be collected after 5-6 years then every 2 years. Can tap when flowering begins but usually only done from male inflorescence stalks. One inflorescence produces ~5 liters sap/day and can be tapped for 1-2 months with 2-4 inflorescences tapped at a time. Sap production maximized with tall inflorescence. Sago requires cutting the trunk and therefore is the last product obtained. Generally only trees ≥30 years are cut. Best planted on steeper slopes, easily eroding lands, or in single or double rows near farm boundaries due to its heavy shade and extensive root system. Good soil stabilizer.

TREE BENEFITS AND USES

FARMER USES



Food, Lumber, Medicinal, Product

The fruit is consumed, used as a stimulant, and can be sold at local market, and the sugar palm, packaged palm, and male flower stalks used to make brown sugar, the young shoots used in cooking, the sap used for palm wine, and palm sugar stem core used for sago. Fibers and leaves are used for roofing, tools, crafts, and as cigarette wrappers, and most products can be obtained without felling the tree. The young roots are used to treat kidney stones, the old roots are used to treat toothache, alcohol obtained from fermented juice and distilled and mixed with herbs and roots of other plants is considered a general-purpose medicine, the sugar is used as a laxative, and the fine pulp occurring between the leaf sheaths is used to speed up recovery from burn wounds.

FARM SERVICES



Erosion Control, Unknown

Maintains water quantity.

BIODIVERSITY BENEFITS

YES

Important resource for the macaque group living in the heavily altered habitat, comprising more than 50 percent of its diet.

Last Updated: April 26, 2021

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TREE SPECIES (SCIENTIFIC NAME)

Artocarpus altilis

ENGLISH COMMON NAME

Breadfruit

INDONESIAN COMMON NAME

Sukun, Kelur, Timbul

TREE FAMILY

MORACEAE

AVERAGE LEAF SIZE (CM)

42.2-78.6cm × 30.2-59.2cm
Length Width

ELEVATIONAL RANGE (M)

0-1550M

TREE HEIGHT

SMALL (10-20M)



DISTRIBUTION



NATIVE TO INDONESIA

NATIVE TO

Region: Asia

Papua New Guinea, Philippines

Indonesia: Lesser Sunda Islands, Maluku Islands, New Guinea, Sulawesi

EXOTIC IN

SE Asia: Laos, Malaysia, Singapore, Vietnam

Indonesia: Java, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM

ROBUSTA ARABICA

COFFEE IMPACT

✓ BENEFICIAL TO COFFEE

REGENERATION

REGENERATES NATURALLY

CULTIVATION

PLANTED

PREVALENCE

Unknown

TREE MANAGEMENT

Regardless of propagation method, young plants do best under shade, but require full sun once established. Land preparation consists of deep ploughing followed by harrowing. Should be planted at the beginning of the rainy season with optional supplemental irrigation during establishment. Spacing of approximately 100 trees/ha at 12 x 8 m or 10 x 10 m apart. Can be grown on a variety of soils, but thrives on alluvial, coastal, well-drained sandy loam, or clay loam soils. Good drainage is essential as trees may shed their fruit when the soil is excessively wet. Some cultivars (especially interspecific hybrids) have adapted to shallow, calcareous soils and appear to tolerate high saline conditions. After establishment they require little management. Insect pollinated.

TREE BENEFITS AND USES

FARMER USES



Food, Livestock Forage, Lumber, Medicinal, Product

The fruit can be eaten raw, boiled, pickled, candied, marinated, steamed or roasted. The fruit is fried and made into sukun chips. The leaves are eaten by cattle, goats, pigs, horses, and elephants, and excess fruit waste can be fed to animals. Horses will eat the bark, young branches, and shoots, so they should be kept away from new plantings. The wood is very light, durable, and resistant to termites. Is used in house, furniture, and canoe construction. Toasted flowers are rubbed on the gums around aching teeth to ease pain, the latex and juice from crushed leaves are used to treat ear infections, skin ailments, and fungal diseases. The latex is massaged into the skin to treat broken bones, sprains, and back pain. The latex is diluted and taken internally to treat stomach problems. The root is an astringent used in skin ailments, and the bark treats headache.

FARM SERVICES



Coffee Shade, Soil Improvement

BIODIVERSITY BENEFITS

Unknown

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TREE SPECIES (SCIENTIFIC NAME)

Artocarpus elasticus

INDONESIAN COMMON NAME

Bendo, Bakil, Danging, Pekalong, Pilang, Talun, Tap, Tekalong, Tarap, Terap, Terap hutan, Terap munyit (Borneo)

TREE FAMILY

MORACEAE

AVERAGE LEAF SIZE (CM)

37.5cm × **22.5cm**
Length Width

DISTRIBUTION

 **NATIVE TO INDONESIA**

ELEVATIONAL RANGE (M)

0–1500m

TREE HEIGHT

LARGE (> 35M)



NATIVE TO

Region: Asia

Malaysia, Myanmar, Philippines, Singapore, Thailand

Indonesia: Borneo, Java, Lesser Sunda Islands, Maluku Islands, New Guinea, Sulawesi, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM

 **ROBUSTA**

COFFEE IMPACT

Unknown

TREE MANAGEMENT

Seeds dispersed by animals. Tree of primary or mature secondary forest.

REGENERATION

 **REGENERATES NATURALLY**

CULTIVATION

 **PLANTED**

PREVALENCE

Unknown

TREE BENEFITS AND USES

FARMER USES



Food, Lumber, Product

The fruits and roasted seeds are edible. The bark is used as fibers and to make basket straps, the latex is used for glue, and the wood is locally used for light construction.

FARM SERVICES

Unknown

Maintains water quality and regulation.

BIODIVERSITY BENEFITS

 **YES**

Used by Javan Loris as sleeping tree

Last Updated: April 26, 2021

Image: <http://specimens.kew.org/herbarium/K001039598> The Herbarium Catalogue, Royal Botanic Gardens, Kew. Published on the Internet <http://www.kew.org/herbcat> [accessed on 10 12 2020].



TREE SPECIES (SCIENTIFIC NAME)

Artocarpus heterophyllus

ENGLISH COMMON NAME

Jackfruit

INDONESIAN COMMON NAME

Nangka, Nongko (Javanese)

TREE FAMILY

MORACEAE

AVERAGE LEAF SIZE (CM)

14.5cm × 7cm
Length Width

ELEVATIONAL RANGE (M)

40-1200m

TREE HEIGHT

MEDIUM (20-35M)



DISTRIBUTION



EXOTIC IN INDONESIA

NATIVE TO

Region: Asia

EXOTIC IN

SE Asia: Laos, Malaysia, Myanmar, Philippines, Singapore, Vietnam
Indonesia: Borneo, Java, Lesser Sunda Islands, Sulawesi, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM

ROBUSTA ARABICA

COFFEE IMPACT

✓ BENEFICIAL TO COFFEE

REGENERATION

REGENERATES NATURALLY

CULTIVATION

PLANTED

PREVALENCE

COMMON IN COFFEE AGROFORESTRY

TREE MANAGEMENT

Propagated by cutting or by seed obtained from mother trees with only large seeds used. Wash seeds to remove the slimy coating and remove the horny part of the pericarp. Seed should be sown fresh but if short-term storage is necessary the seed should not be allowed to dry out and can only be stored for up to 3 months. Germination begins within 10 days and 80-100% germination is achieved within 35-40 days after sowing. Young seedlings potted when they have 4 leaves. Older seedlings are hard to transplant. Seedlings are raised under shade (50-70% of full light intensity) and should be planted at less than one year old, before the roots grow outside the pot. Disturbing the roots may be fatal. Space at 8-12 m in square or hexagonal patterns at a density of 100-120 trees/ha. Best planting time is during rainy season and watering may be needed during the first 2 years. Soil at the base of the plant should be raised with drainage pathways constructed to avoid waterlogging. Dead branches should be removed from the interior of the tree so the developing fruit gets sufficient light and to check for the spread of pests. Mulching and fertilizer recommended.

TREE BENEFITS AND USES

FARMER USES



Food, Livestock Forage, Fuelwood, Lumber, Medicinal, Product

The seeds are eaten after boiling or roasting, dried and salted as table nuts, or ground to make flour. The young fruit is cooked as a vegetable or pickled and canned. The fruit is eaten fresh or made into various local delicacies ('dodol' and 'kolak' in Java), chutneys and jellies, or reduced to a concentrate or powder for preparing drinks. The young leaves are readily eaten by cattle and other livestock. The wood is resistant to termite attack and fungal decay, and makes high quality furniture and handles for agricultural tools, musical instruments, and construction materials. Small and medium branches are used as fuelwood, and the bark produces tannins and is occasionally used to make cordage and cloth. Wood particles are used for yellow dye, and the tree also produces latex that is employed as a household cement for mending china and for caulking boats. Several reports indicate it is a potential anti-malarial plant, and it can be sold at local markets.

Last Updated: April 28, 2021

Image: Adi Nugroho

FARM SERVICES



Coffee Shade, Windbreak, Erosion Control

BIODIVERSITY BENEFITS

✓ YES

Javan loris feeding tree



TREE SPECIES (SCIENTIFIC NAME)

Artocarpus integer

ENGLISH COMMON NAME

Chempedak

INDONESIAN COMMON NAME

Cempedak

TREE FAMILY

MORACEAE

AVERAGE LEAF SIZE (CM)

15cm × **7.25cm**
Length Width

DISTRIBUTION

 **NATIVE TO INDONESIA**

ELEVATIONAL RANGE (M)

0–500m

TREE HEIGHT

MEDIUM (20–35M)



NATIVE TO

Region: Asia

Malaysia, Papua New Guinea, Singapore, Thailand

Indonesia: Borneo, Java, Lesser Sunda Islands, Maluku Islands, New Guinea, Sulawesi, Sumatra

EXOTIC IN

SE Asia: Laos, Vietnam

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM

 **ROBUSTA**

COFFEE IMPACT

Unknown

TREE MANAGEMENT

Tree produces fruit and seeds profusely. Seeds are dispersed by animals. Grows rapidly in full light but tolerates shade in early life and can be raised under shade at a slower rate. Die-back may occur if not thinned. Fencing plantations with wire netting recommended to protect against grazing animals

REGENERATION

 **REGENERATES NATURALLY**

CULTIVATION

 **PLANTED**

PREVALENCE

 **COMMON IN COFFEE AGROFORESTRY**

TREE BENEFITS AND USES

FARMER USES



Food, Livestock Forage, Lumber, Medicinal, Product

Fruit, vegetable, and immature fruit are used to make soup, the unripe fruit is used as a vegetable or made into pickles, the ripe fruit is eaten fresh or preserved in syrup, and the seeds are rich in starch and eaten. There are two common fruit varieties, barka, that has a sweet, fleshy, crisp pericarp, and kapa, that is inferior and has a thin mucilage and sour pericarp. Its wood is used to build houses and tools and the tree also produces latex and dye. Leaves are used to treat wounds and skin sores.

FARM SERVICES

Unknown

BIODIVERSITY BENEFITS

 **YES**

Roosting tree of Red Junglefowl (*Gallus gallus spadiceus*).

Last Updated: April 26, 2021

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TREE SPECIES (SCIENTIFIC NAME)

Artocarpus teysmannii

INDONESIAN COMMON NAME

Sali saling, Tipulu (Sulawesi), Kayu saling saling

TREE FAMILY

MORACEAE

AVERAGE LEAF SIZE (CM)

10-25cm × 6-13cm

Length Width

DISTRIBUTION



NATIVE TO INDONESIA

ELEVATIONAL RANGE (M)

0-300m

TREE HEIGHT

LARGE (> 35M)



NATIVE TO

Region: Asia

Malaysia, Papua New Guinea, Singapore, Thailand

Indonesia: Borneo, Maluku Islands, New Guinea, Sulawesi, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM



ROBUSTA

COFFEE IMPACT

Unknown

TREE MANAGEMENT

Unknown

REGENERATION

Unknown

CULTIVATION

Unknown

PREVALENCE



COMMON IN COFFEE AGROFORESTRY

TREE BENEFITS AND USES

FARMER USES



Lumber, Product

The wood is used for dug-out canoes and boat building and the sap and latex used for glue.

FARM SERVICES

Unknown

BIODIVERSITY BENEFITS

✓ **YES**

Constituted more than 80 percent of the diet of some macaque groups

Last Updated: April 26, 2021

Image: <http://specimens.kew.org/herbarium/K000357629> The Herbarium Catalogue, Royal Botanic Gardens, Kew. Published on the Internet <http://www.kew.org/herbcat> [accessed on 10 12 2020].



TREE SPECIES (SCIENTIFIC NAME)

Averrhoa bilimbi

ENGLISH COMMON NAME

Bilimbi

INDONESIAN COMMON NAME

Belimbing, Belimbing wuluh, Belimbing sayur

TREE FAMILY

OXALIDACEAE

AVERAGE LEAF SIZE (CM)

6cm × **1.225cm**
Length Width

DISTRIBUTION

NATIVE TO INDONESIA

ELEVATIONAL RANGE (M)

0-1200m

TREE HEIGHT

SHRUB (1-10M)



NATIVE TO

Region: Asia

Indonesia: Maluku Islands, Sulawesi

EXOTIC IN

SE Asia: Cambodia, Laos, Malaysia, Myanmar, Singapore, Thailand, Vietnam

Indonesia: Borneo, Java, New Guinea, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM

ROBUSTA **ARABICA**

COFFEE IMPACT

Unknown

TREE MANAGEMENT

Unknown

REGENERATION

Unknown

CULTIVATION

PLANTED

PREVALENCE

COMMON IN COFFEE AGROFORESTRY

TREE BENEFITS AND USES

FARMER USES



Food, Lumber, Medicinal, Ornamental

Fruits are a good source of Vitamin C and are eaten and also used to produce sugar and spices. The fruits are combined with pepper and eaten to cause sweating when people are feeling "under the weather", the fruits are used as treatment for coughs, thiamine deficiency, and abdominal discomfort, a paste of pickled fruits is smeared all over the body to hasten recovery after a fever, a syrup is prepared from the fruit and taken as a cure for fever and inflammation and to stop rectal bleeding and alleviate internal hemorrhoids, and the leaves are used to treat hypertension. It is grown in home gardens due to its attractive small purplish-red flowers in clusters along the trunk and branches.

FARM SERVICES

Unknown

BIODIVERSITY BENEFITS

YES

Food source for bees, butterflies and birds.

Last Updated: April 26, 2021

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TREE SPECIES (SCIENTIFIC NAME)

Averrhoa carambola

ENGLISH COMMON NAME

Starfruit, Foreign peach

INDONESIAN COMMON NAME

Belimbing manis

TREE FAMILY

OXALIDACEAE

AVERAGE LEAF SIZE (CM)

20cm × **5cm**
Length Width

DISTRIBUTION

 **NATIVE TO INDONESIA**

ELEVATIONAL RANGE (M)

0-900m

TREE HEIGHT

SHRUB (1-10M)



NATIVE TO

Region: Asia

Malaysia, Singapore

Indonesia: Java, Maluku Islands, Sulawesi

EXOTIC IN

SE Asia: Cambodia, Laos, Philippines, Thailand, Vietnam

Indonesia: Borneo, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM

 **ROBUSTA**  **ARABICA**

COFFEE IMPACT

Unknown

TREE MANAGEMENT

Delicate and requires careful attention when young. Requires pruning and thinning of excess fruit at an early stage due to fast growth rate. Crops are harvested from grafted varieties when they are 2- 3 years old.

REGENERATION

 **REGENERATES NATURALLY**

CULTIVATION

 **PLANTED**

PREVALENCE

 **COMMON IN COFFEE AGROFORESTRY**

TREE BENEFITS AND USES

FARMER USES



Food, Medicinal, Ornamental

Fruits are extremely perishable so they must be consumed locally and are eaten fresh, mixed with other fruits in salads, processed into drinks, stewed, pickled, or used for chutney and jam, and the fruit flavor is enhanced by peeling off the 'wing' edges, removing most of the oxalic acid. The fruit is a good source of Vitamin C and used as a laxative and in traditional medicine for skin disorders and fevers. Used medicinally to lower blood pressure. With its delicate, light green foliage, small pink flowers, and prolific golden-yellow fruits, it is popular as an ornamental plant.

FARM SERVICES

Unknown

BIODIVERSITY BENEFITS

 **YES**

Birds forage in the tree as fruit and flowers attract insects.

Last Updated: April 27, 2021

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TREE SPECIES (SCIENTIFIC NAME)

Baccaurea motleyana

ENGLISH COMMON NAME

Rambai fruit tree

INDONESIAN COMMON NAME

Rambai

TREE FAMILY

PYLLANTHACEAE

AVERAGE LEAF SIZE (CM)

25.25cm × 10.1cm

Length Width

DISTRIBUTION



NATIVE TO INDONESIA

NATIVE TO

Region: Asia

Malaysia, Singapore, Thailand

Indonesia: Borneo, Sumatra

EXOTIC IN

Indonesia: Java, Maluku Islands

ELEVATIONAL RANGE (M)

0–500m

TREE HEIGHT

MEDIUM (20–35M)



COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM

ROBUSTA **COFFEE**

COFFEE IMPACT

Unknown

TREE MANAGEMENT

Seeds dispersed by animals. Intermediate successional tree found in native and regenerating forest.

REGENERATION

REGENERATES NATURALLY

CULTIVATION

PREVALENCE

Unknown

TREE BENEFITS AND USES

FARMER USES



Lumber

FARM SERVICES

Unknown

BIODIVERSITY BENEFITS

Unknown

Last Updated: April 26, 2021

Image: <http://specimens.kew.org/herbarium/K001056522> The Herbarium Catalogue, Royal Botanic Gardens, Kew. Published on the Internet <http://www.kew.org/herbcat> [accessed on 10 12 2020].

TREE SPECIES (SCIENTIFIC NAME)

Baccaurea racemosa

INDONESIAN COMMON NAME

Menteng, Engkumi, Kayu masam, Kokonau, Kunau, Kunyi, Longkumo, Moho liox, Tunding Undang, Umbarian (Borneo); Roesip, Kisip (Sumatra), Kapundung

TREE FAMILY

PYLLANTHACEAE

AVERAGE LEAF SIZE (CM)

13.9cm × **10.55cm**
Length Width

DISTRIBUTION



NATIVE TO INDONESIA

ELEVATIONAL RANGE (M)

0-1600M

TREE HEIGHT

SMALL (10-20M)



NATIVE TO

Region: Asia

Malaysia, Singapore, Thailand

Indonesia: Borneo, Java, Lesser Sunda Islands, Maluku Islands, Sulawesi, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM

COFFEE

COFFEE IMPACT

Unknown

TREE MANAGEMENT

Unknown

REGENERATION

Unknown

CULTIVATION



PLANTED

PREVALENCE

COMMON IN COFFEE AGROFORESTRY

TREE BENEFITS AND USES

FARMER USES



Food, Fuelwood

The fruit is consumed, can be sour and sweet, and can also be sold commercially or at market.

FARM SERVICES

Unknown

BIODIVERSITY BENEFITS

Unknown

Last Updated: April 26, 2021



TREE SPECIES (SCIENTIFIC NAME)

Bambusa vulgaris (and other *Bambusa sp.*)

ENGLISH COMMON NAME

Common bamboo

INDONESIAN COMMON NAME

Bambu ampel, Bambu kuning, Domar (Ambonese)

TREE FAMILY

POACEAE

AVERAGE LEAF SIZE (CM)

18cm × **2.5cm**
Length Width

ELEVATIONAL RANGE (M)

0-1200m

TREE HEIGHT

SMALL (10-20M)



DISTRIBUTION

EXOTIC IN INDONESIA

NATIVE TO

Region: Asia

Cambodia, Laos, Myanmar, Thailand, Vietnam

EXOTIC IN

SE Asia: Malaysia, Papua New Guinea, Singapore

Indonesia: Borneo, Java, Lesser Sunda Islands, Maluku Islands, New Guinea, Sulawesi, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM

ROBUSTA **ARABICA**

COFFEE IMPACT

BENEFICIAL TO COFFEE

REGENERATION

REQUIRES PROPAGATION

CULTIVATION

PLANTED

TREE MANAGEMENT

Propagated most easily by culm and branch cuttings and less commonly by rhizome, layering, and tissue culture. Rhizome cuttings give good results when taken from 1-2-year-old culms. Plant during the late rainy season. Use spacing of 6-12 m x 6-12 m. Competes with coffee.

PREVALENCE

COMMON IN COFFEE AGROFORESTRY

TREE BENEFITS AND USES

FARMER USES



Food, Fuelwood, Lumber, Medicinal, Product

The very young shoots are edible but are rarely sold as a vegetable. The wood is used to make stipes for fishing cane, masts for boats, poles, rudders, outriggers, fencing, and props. Young shoots of the yellow culm form are boiled in water and used as a medicine to cure hepatitis.

FARM SERVICES



Erosion Control, Unknown

Conserves water and maintains water quality and regulation.

BIODIVERSITY BENEFITS

YES

Sleeping site for Javan Slow Loris (*Nycticebus javanicus*).

Last Updated: May 10, 2021

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TREE SPECIES (SCIENTIFIC NAME)

Bischofia javanica

ENGLISH COMMON NAME

Java cedar

INDONESIAN COMMON NAME

Gadog, Gintungan (Javanese), Kerinjing (Sumatera), Sikkam

TREE FAMILY

PYLLANTHACEAE

AVERAGE LEAF SIZE (CM)

5-14cm × **3-9cm**
Length Width

DISTRIBUTION



NATIVE TO INDONESIA

ELEVATIONAL RANGE (M)

0-1800M

TREE HEIGHT

LARGE (> 35M)



NATIVE TO

Region: Asia

Cambodia, Laos, Malaysia, Myanmar, Papua New Guinea, Philippines, Singapore, Thailand, Vietnam

Indonesia: Borneo, Java, Lesser Sunda Islands, Maluku Islands, New Guinea, Sulawesi, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM



ROBUSTA

COFFEE IMPACT



BENEFICIAL TO COFFEE

TREE MANAGEMENT

Propagated by seed, natural seedlings, and stem cuttings. Seeds may be collected in large quantities (1 kg contains 61,500-90,000 dry seeds) and stored for up to 6 month. Germination starts 1-3 weeks after sowing. 70% of the seeds germinate in 5-6 weeks. Direct sowing in the field is not recommended due to heavy water requirements of young plants. For pure stands, space at 2 x 3 m or in alternating rows for mixed stands at 1 m x 3 m or 2.5 m x 5 m. Self prunes once the canopy closes after ~5 years. May develop forks as a result of attacks by top and twig-boring insects.

REGENERATION



REGENERATES NATURALLY

CULTIVATION



PLANTED

PREVALENCE



COMMON IN COFFEE AGROFORESTRY

TREE BENEFITS AND USES

FARMER USES



Food, Livestock Forage, Fuelwood, Lumber, Medicinal, Product

The young soft leaves are cooked and eaten as a vegetable. The leaves and latex help treat ulcers, parasites, and dysentery. The wood is medium-weight and moderately hard, the heartwood is purplish-brown to reddish-brown and the sapwood is pale brown to pale reddish-brown, with the bark used for dyes and the wood used for versatile, general construction.

FARM SERVICES



Coffee Shade, Reforestation

BIODIVERSITY BENEFITS



YES

Preferred tree of epiphytes and host for orchids.

Last Updated: April 27, 2021

Image: <http://specimens.kew.org/herbarium/K000246702> The Herbarium Catalogue, Royal Botanic Gardens, Kew. Published on the Internet <http://www.kew.org/herbcat> [accessed on 10 12 2020].



TREE SPECIES (SCIENTIFIC NAME)

Bouea macrophylla

ENGLISH COMMON NAME

Plum Mango

INDONESIAN COMMON NAME

Gandaria, Ramania (Sumatra)

TREE FAMILY

ANACARDIACEAE

AVERAGE LEAF SIZE (CM)

20.5cm × **6cm**
Length Width

DISTRIBUTION



NATIVE TO INDONESIA

ELEVATIONAL RANGE (M)

0–850m

TREE HEIGHT

MEDIUM (20–35M)



NATIVE TO

Region: Asia

Malaysia, Singapore, Thailand

Indonesia: Borneo, Java, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM

ROBUSTA **ARABICA**

COFFEE IMPACT

BENEFICIAL TO COFFEE

TREE MANAGEMENT

Tree of primary lowland forest

REGENERATION

REGENERATES NATURALLY

CULTIVATION

PLANTED

PREVALENCE

Unknown

TREE BENEFITS AND USES

FARMER USES



Food

Fruits are consumed fresh, cooked in syrup, or made into a compote. Young fruits are used as an ingredient in a special kind of 'sambal', the chili-based condiment, and in pickles ('asinan'). Occasionally the young deep violet or sometimes strikingly white leaves are consumed fresh with the gandaria-flavored 'sambal' when they emerge.

FARM SERVICES



Coffee Shade

BIODIVERSITY BENEFITS

YES

Seeds dispersed by and are a food source of Gibbon (*Hylobates syndactylus*).

Last Updated: April 26, 2021

Image: <http://specimens.kew.org/herbarium/K000695173> The Herbarium Catalogue, Royal Botanic Gardens, Kew. Published on the Internet <http://www.kew.org/herbcat> [accessed on 10 12 2020].



TREE SPECIES (SCIENTIFIC NAME)

Calliandra houstoniana

ENGLISH COMMON NAME

Calliandra

INDONESIAN COMMON NAME

Kaliandra

TREE FAMILY

FABACEAE

AVERAGE LEAF SIZE (CM)

14.5cm × 0.5-2cm

Length Width

DISTRIBUTION



EXOTIC IN INDONESIA

ELEVATIONAL RANGE (M)

250-1800m

TREE HEIGHT

SMALL (10-20M)



NATIVE TO

Region: Americas

EXOTIC IN

Indonesia: Java, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM



ROBUSTA

COFFEE IMPACT



BENEFICIAL TO COFFEE

REGENERATION



REGENERATES NATURALLY

CULTIVATION



PLANTED

TREE MANAGEMENT

Fast growing and easy to regenerate and manage. Seedlings grow quickly. Weeding necessary during first year. Prune in cycles up to 4 months. Highest yields are obtained from coppicing when cut at 1 m. Root pruning and side pruning is recommended for seedling to keep taproot checked and encourage lateral root development. Likely competes with coffee and is recommended to be planted near but not over coffee as it has some coffee pollination benefits. Has invasive tendencies.

PREVALENCE



COMMON IN COFFEE AGROFORESTRY

TREE BENEFITS AND USES

FARMER USES



Livestock Forage, Fuelwood

FARM SERVICES



Nitrogen Fixation

BIODIVERSITY BENEFITS



YES

Produces nectar that attracts insects and is a good source of nectar for honeybees as it flowers year-round. Feeding tree of the Javan Slow Loris.

Last Updated: April 28, 2021

Image: Dulanser Siburian



TREE SPECIES (SCIENTIFIC NAME)

Carallia brachiata

ENGLISH COMMON NAME

Corkybark

INDONESIAN COMMON NAME

Perepat Hutan, Ampana, Aroi, Aru, Bara, Belengkeching, Bepinang, Beranggae, Dabong, Ganggang putih, Kelai, Kitir-kitir, Massulie, Mundar, Mundar burung, Pacar, Petis, Rabong, Sawar bubu, Selunser, Tampilas, Tulang ular (Borneo), Manggisian

TREE FAMILY

RHIZOPHORACEAE

AVERAGE LEAF SIZE (CM)

4-10cm × **4-6cm**
Length Width

DISTRIBUTION



NATIVE TO INDONESIA

ELEVATIONAL RANGE (M)

0-800m

TREE HEIGHT

LARGE (> 35M)



NATIVE TO

Region: Asia

Cambodia, Laos, Malaysia, Myanmar, Papua New Guinea, Singapore, Thailand, Vietnam

Indonesia: Borneo, Java, Lesser Sunda Islands, Maluku Islands, New Guinea, Sulawesi, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM



ROBUSTA

COFFEE IMPACT

Unknown

TREE MANAGEMENT

Seeds dispersed by animals. Tree of late successional forest.

REGENERATION



REGENERATES NATURALLY

CULTIVATION

PREVALENCE

Unknown

TREE BENEFITS AND USES

FARMER USES



Fuelwood, Lumber, Medicinal

The wood is used for furniture, floor paneling, and parquet flooring. Leaves used medicinally.

FARM SERVICES

Unknown

BIODIVERSITY BENEFITS

Unknown

Last Updated: April 27, 2021

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TREE SPECIES (SCIENTIFIC NAME)

Carica papaya

ENGLISH COMMON NAME

Papaya

INDONESIAN COMMON NAME

Pepaya, Telo Gantung, Kates (Javanese), Gedang (Sundanese)

TREE FAMILY

CARICACEAE

AVERAGE LEAF SIZE (CM)

30-105cm × **30-60cm**
Length Width

DISTRIBUTION

EXOTIC IN INDONESIA

ELEVATIONAL RANGE (M)

0-1600M

TREE HEIGHT

SHRUB (1-10M)



NATIVE TO

Region: Americas

EXOTIC IN

SE Asia: Cambodia, Papua New Guinea, Thailand, Vietnam

Indonesia: Borneo, Java, Sulawesi, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM

ROBUSTA **ARABICA**

COFFEE IMPACT

Unknown

TREE MANAGEMENT

Propagated by seed and germinates in 2-3 weeks. Seedlings grow rapidly. Weed control necessary. Requires pH control and a constant water supply but is relatively resistant to drought. Very responsive to fertilizers. Fruit production begins within a year of planting and produces 30-150 fruits/year. Can tap latex at least once a week. Can rejuvenate mature trees by cutting back to 30 cm above the ground. Can live over 25 years. Yields can be maximized by renewing every 3 years.

REGENERATION

Unknown

CULTIVATION

PLANTED

PREVALENCE

COMMON IN COFFEE AGROFORESTRY

TREE BENEFITS AND USES

FARMER USES



Food, Medicinal

Fruits are consumed, a sweet meat is made from the flowers, and young leaves are also sometimes eaten. Can be used when coffee sales are insufficient or urgent cash needs arise as it can be sold at market and can produce year round.

FARM SERVICES

Unknown

BIODIVERSITY BENEFITS

YES

Seeds dispersed by bats.

Last Updated: April 27, 2021

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TREE SPECIES (SCIENTIFIC NAME)

Ceiba pentandra

ENGLISH COMMON NAME

Kapok Tree

INDONESIAN COMMON NAME

Kapuk randu, Randu, Kapas

TREE FAMILY

MALVACEAE

AVERAGE LEAF SIZE (CM)

15cm × **2-3cm**
Length Width

DISTRIBUTION

 **EXOTIC IN INDONESIA**

ELEVATIONAL RANGE (M)

0-900m

TREE HEIGHT

LARGE (> 35M)



NATIVE TO

Region: Americas

EXOTIC IN

SE Asia: Cambodia, Laos, Papua New Guinea, Thailand, Vietnam
Indonesia: Java, Lesser Sunda Islands, Sulawesi, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM

 **ROBUSTA**  **ARABICA**

COFFEE IMPACT

Unknown

TREE MANAGEMENT

Plant at 7.3 x 7.3 m. Thinning only necessary if a cover crop is grown. Insect and bat pollinated. Long-lived tree

REGENERATION

 **REGENERATES NATURALLY**

CULTIVATION

 **PLANTED**

PREVALENCE

 **COMMON IN COFFEE AGROFORESTRY**

TREE BENEFITS AND USES

FARMER USES



Food, Fuelwood, Medicinal, Product

Its seeds, fibers, cotton, and dye are used to make pillows and mattresses, the oil and fruit/vegetable are consumed, and the leaves are used for hair care. Compressed fresh leaves are used against dizziness, a decoction of the boiled roots is used to treat swelling, the gum is eaten to relieve stomach upset, a decoction of the tender shoots is used as a contraceptive, and a leaf infusion is taken orally against cough and hoarse throat. The leaves are pounded together with fermented boiled rice water to make an extract that is administered (dosing at approximately 500 ml three times a day for three consecutive days) to cows orally as a remedy for reproductive problems.

FARM SERVICES

Unknown

Maintains water regulation and quantity.

BIODIVERSITY BENEFITS

 **YES**

Used for foraging and perching by many bird species

Last Updated: April 27, 2021

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TREE SPECIES (SCIENTIFIC NAME)

Ceodes umbellifera

ENGLISH COMMON NAME

Birdlime tree

INDONESIAN COMMON NAME

Ki cau

TREE FAMILY

NYCTAGINACEAE

AVERAGE LEAF SIZE (CM)

17cm × **8cm**

Length Width

DISTRIBUTION



NATIVE TO INDONESIA

ELEVATIONAL RANGE (M)

150–1000m

TREE HEIGHT

MEDIUM (20–35M)



NATIVE TO

Region: Asia, Oceania

Malaysia, Myanmar, Papua New Guinea, Philippines, Singapore, Thailand, Vietnam

Indonesia: Borneo, Java, Lesser Sunda Islands, Maluku Islands, New Guinea, Sulawesi, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM



ROBUSTA

COFFEE IMPACT

Unknown

TREE MANAGEMENT

Propagates naturally without human intervention. Seedlings are retained, managed, and planted for various purposes

REGENERATION



REGENERATES NATURALLY

CULTIVATION



PLANTED

PREVALENCE



COMMON IN COFFEE AGROFORESTRY

TREE BENEFITS AND USES

FARMER USES

Unknown

FARM SERVICES



Soil Improvement

BIODIVERSITY BENEFITS

Unknown

Last Updated: February 4, 2021

Image: <http://specimens.kew.org/herbarium/K000779382> The Herbarium Catalogue, Royal Botanic Gardens, Kew. Published on the Internet <http://www.kew.org/herbcat> [accessed on 10 12 2020].



TREE SPECIES (SCIENTIFIC NAME)

Cinnamomum burmanii

ENGLISH COMMON NAME

Cinnamon

INDONESIAN COMMON NAME

Kulit manis, Kayu manis

TREE FAMILY

LAURACEAE

AVERAGE LEAF SIZE (CM)

10cm × **3.75cm**
Length Width

DISTRIBUTION



NATIVE TO INDONESIA

ELEVATIONAL RANGE (M)

100–1400m

TREE HEIGHT

SMALL (10–20M)



NATIVE TO

Region: Asia

Myanmar, Philippines, Vietnam

Indonesia: Borneo, Java, Lesser Sunda Islands, Sulawesi, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM



ROBUSTA



ARABICA

COFFEE IMPACT



MAY COMPETE WITH COFFEE

TREE MANAGEMENT

Propagated by coppice shoots or seedlings collected in the gardens and kept in nursery for one year. Yields are greatest in dense stands and over 900m elevation. Can only be grown at lower altitudes under a dense canopy of shade that can maintain a humid and cool microclimate. Can be clear cut and replanted or selectively harvested (10 to 20 trees cut/year/stand)

REGENERATION



REGENERATES NATURALLY

CULTIVATION



PLANTED

PREVALENCE



COMMON IN COFFEE AGROFORESTRY

TREE BENEFITS AND USES

FARMER USES



Food, Fuelwood, Product

The dried bark is used as spice and the bark of the trunk and branches are collected for export. The wood from which the bark has been peeled off is used as fuelwood for home consumption or for sale.

FARM SERVICES

Unknown

BIODIVERSITY BENEFITS

Unknown

Last Updated: April 26, 2021

Image: Photo by Forest & Kim Starr; <http://www.hear.org/starr/plants/images/image/?q=090213-2452> Creative Commons Attribution 3.0 Unported license.



TREE SPECIES (SCIENTIFIC NAME)

Cinnamomum parthenoxylon

INDONESIAN COMMON NAME

Kayu lada, Ki sereh (Sundanese), Selasih (Javanese), Rawali (Borneo)

TREE FAMILY

LAURACEAE

AVERAGE LEAF SIZE (CM)

10cm × **5cm**
Length Width

DISTRIBUTION



NATIVE TO INDONESIA

ELEVATIONAL RANGE (M)

0-2000m

TREE HEIGHT

UNKNOWN

NATIVE TO

Region: Asia

Cambodia, Laos, Malaysia, Myanmar, Singapore, Thailand, Vietnam

Indonesia: Borneo, Java, Lesser Sunda Islands, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM

ROBUSTA **ARABICA**

COFFEE IMPACT

Unknown

TREE MANAGEMENT

Seeds dispersed by animals. Long lived tree of primary and secondary forest

REGENERATION

REGENERATES NATURALLY

CULTIVATION

PREVALENCE

COMMON IN COFFEE AGROFORESTRY

TREE BENEFITS AND USES

FARMER USES



Food, Fuelwood, Lumber, Medicinal, Product

The wood is used for construction and cabinet work and the wood oil contains safrole which can be used in soaps and in local medicine. The aromatic bark is used as a spice for flavoring food and is considered an excellent tonic. The roots help fight fever and are applied after childbirth.

FARM SERVICES

Unknown

BIODIVERSITY BENEFITS

Unknown

Last Updated: February 17, 2021

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TREE SPECIES (SCIENTIFIC NAME)

Citrus aurantiifolia

ENGLISH COMMON NAME

Lime

INDONESIAN COMMON NAME

Jeruk Nipis, jeruk pecel

TREE FAMILY

RUTACEAE

AVERAGE LEAF SIZE (CM)

6cm × **3.5cm**
Length Width

DISTRIBUTION

EXOTIC IN INDONESIA

ELEVATIONAL RANGE (M)

0-1000M

TREE HEIGHT

SHRUB (1-10M)



NATIVE TO

Region: Asia

EXOTIC IN

SE Asia: Cambodia, Laos, Malaysia, Singapore, Vietnam

Indonesia: Java, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM

ROBUSTA **ARABICA**

COFFEE IMPACT

MAY COMPETE WITH COFFEE

REGENERATION

Unknown

CULTIVATION

PLANTED

TREE MANAGEMENT

Propagated by seed or air layering (i.e. rooting from branches/stems). Sturdy twigs (preferably suckers) selected for layering in the dust of coconut husk. Layers are potted and nursed for 2-4 weeks before planting. Trees are pruned to thin the branches and to remove suckers and limbs infected by canker. Attacked by Citrus Greening Citrus Vascular Phloem Disease (CVPD) especially at lower altitudes (<1000 masl) but less affected by CVPD at higher altitudes (>1000 masl). Able to withstand dry periods and poor soil. Harvest time can be planned by halting irrigation for 3 weeks in the dry season, which triggers flowering when resumed

PREVALENCE

COMMON IN COFFEE AGROFORESTRY

TREE BENEFITS AND USES

FARMER USES



Food, Fuelwood, Medicinal, Ceremonial

Used in nearly every home in South-East Asia, the fruit is mainly used to flavor food, but also to prepare drinks. The rich flavor and acid taste make it a favorite for hot and spicy dishes, either fresh or in the form of pickles and sauces. Its refreshing qualities are also favored in lime juice, lime tea, and on other fruits such as papaya. Used for shade. The leaves and fruits have many medicinal uses, some of which are linked with the belief that limes drive evil spirits away. Fruits can be sold at local markets.

FARM SERVICES



Coffee Shade

BIODIVERSITY BENEFITS

Unknown

Last Updated: April 28, 2021

Image: Isner manalu



TREE SPECIES (SCIENTIFIC NAME)

Citrus aurantium

ENGLISH COMMON NAME

Tangor, Bitter Orange

INDONESIAN COMMON NAME

Jeruk siam, Jeruk manis

TREE FAMILY

RUTACEAE

AVERAGE LEAF SIZE (CM)

10cm × **5cm**
Length Width

ELEVATIONAL RANGE (M)

0-2000M

TREE HEIGHT

SHRUB (1-10M)



DISTRIBUTION

 **EXOTIC IN INDONESIA**

NATIVE TO

Region: Asia

EXOTIC IN

SE Asia: Cambodia, Laos, Myanmar, Vietnam

Indonesia: Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM

 **ROBUSTA**  **ARABICA**

COFFEE IMPACT

 **MAY COMPETE WITH COFFEE**

REGENERATION

 **REGENERATES NATURALLY**

CULTIVATION

 **PLANTED**

PREVALENCE

 **COMMON IN COFFEE AGROFORESTRY**

TREE MANAGEMENT

Propagated by seed or budding. Seed should be harvested from ripe fruit, washed thoroughly, and sown in containers immediately. Sow stored seeds in containers as soon as possible. Germination usually occurs within 2-3 weeks. Seedlings must be watered and kept well ventilated. Spacing 5 m x 6 m (333 trees/ha). 'Indian River', 'Bessie' and 'Madam Vinous' rootstocks are resistant to foot rot. Irrigation required during dry periods following planting (10 L water per week). Put 1 kg rock phosphate in the bottom of the hole at planting. After returning and settling top soil the plant should be above field level to reduce the risk of foot rot. In wet areas a cover crop is necessary to prevent erosion (*Pueraria phaseoloides* is one recommendation). Regularly attacked by Citrus Greening Citrus Vascular Phloem Disease (CPVD), especially at lower altitudes (<1000 masl) but less affected by CPVD at higher altitudes (>1000 masl). Able to withstand dry periods and poor soil but it prefers a deep, well-drained yet moisture retaining loamy soil and full sun. Trees are hermaphroditic and insect pollinated.

TREE BENEFITS AND USES

FARMER USES



Food, Livestock Forage, Lumber, Medicinal, Product

Leaf decoction with salt is taken orally for digestive tract ailments, nerve disorders, fever, asthma, blood pressure, general fatigue, and vomiting. Crushed leaves or fruit juice is massaged into the skin to relieve itching. Macerated root, leaf, or fruit mesoderm is taken orally for urethritis. Macerated fruit mesoderm or bark decoction is taken orally for liver ailments. Fruit juice or leaf decoction with sugar is taken orally for cold and loss of appetite, while crushed leaf decoction as a bath relieves headache and rheumatism. Broken bones are massaged with roasted fruit. Leaf oil has sedative properties. Fruit is generally eaten fresh. Fruits can be sold at local markets.

FARM SERVICES



Coffee Shade

BIODIVERSITY BENEFITS

Unknown

Last Updated: February 4, 2021

Image: Igor Sheremetyev © Digital Image © Board of Trustees, RBG Kew <http://creativecommons.org/licenses/by/3.0/>



TREE SPECIES (SCIENTIFIC NAME)

Citrus hystrix

ENGLISH COMMON NAME

Kaffir Lime

INDONESIAN COMMON NAME

Jeruk Purut

TREE FAMILY

RUTACEAE

AVERAGE LEAF SIZE (CM)

9cm × **4cm**
Length Width

DISTRIBUTION

 **NATIVE TO INDONESIA**

ELEVATIONAL RANGE (M)

0-1500m

TREE HEIGHT

SMALL (10-20M)



NATIVE TO

Region: Asia

Cambodia, Malaysia, Myanmar, Papua New Guinea, Philippines, Singapore, Thailand, Vietnam

Indonesia: Borneo, Java, Lesser Sunda Islands, Maluku Islands, New Guinea, Sulawesi, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM

 **ROBUSTA**  **ARABICA**

COFFEE IMPACT

 **MAY COMPETE WITH COFFEE**

TREE MANAGEMENT

Attacked by Citrus Greening Citrus Vascular Phloem Disease (CPVD), especially at lower altitudes (<1000 masl). Less affected by CVPD at higher altitudes (>1000 masl). Able to withstand dry periods and poor soil

REGENERATION

 **REGENERATES NATURALLY**

CULTIVATION

 **PLANTED**

PREVALENCE

 **COMMON IN COFFEE AGROFORESTRY**

TREE BENEFITS AND USES

FARMER USES

Food, Medicinal, Ceremonial

Used for magic. The juice of the fruit is used for seasoning and to prepare drinks. Leaves are used to season food. Used as an insecticide to kill land leeches via head and foot washing. Fruits can be sold at local markets.

FARM SERVICES

Unknown

BIODIVERSITY BENEFITS

Unknown

Last Updated: February 4, 2021

Image: Dr Henry Oakeley's RCP Medicinal Plants Digital Image © Board of Trustees, RBG Kew <http://creativecommons.org/licenses/by/3.0/>

TREE SPECIES (SCIENTIFIC NAME)

Citrus maxima

ENGLISH COMMON NAME

Pomelo

INDONESIAN COMMON NAME

Jeruk bali

TREE FAMILY

RUTACEAE

AVERAGE LEAF SIZE (CM)

12.5cm × **7cm**
Length Width

DISTRIBUTION



NATIVE TO INDONESIA

ELEVATIONAL RANGE (M)

0-400m

TREE HEIGHT

SMALL (10-20M)



NATIVE TO

Region: Asia

Laos, Myanmar, Thailand, Vietnam

Indonesia: Borneo, Java, Lesser Sunda Islands, Sulawesi, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM

ROBUSTA **ARABICA**

COFFEE IMPACT

MAY COMPETE WITH COFFEE

TREE MANAGEMENT

Plant at 3-4.5 m spacing. Can interplant with the colurrinar tree (*Erythrina fusca*) to shade the mature pummelos to help retain the soil with its extensive, fibrous root system and enrich the soil with its falling leaves. Tolerates dry periods and a wide range of soils from coarse sand to heavy clay but prefers deep, medium-textured fertile soils free from salt. Attacked by Citrus Greening Citrus Vascular Phloem Disease (CPVD) at lower altitudes (<1000 masl) but is less affected by CVPD at higher altitudes (>1000 masl)

REGENERATION

Unknown

CULTIVATION

PLANTED

PREVALENCE

COMMON IN COFFEE AGROFORESTRY

TREE BENEFITS AND USES

FARMER USES



Food, Medicinal

The fruits are a rich source of vitamin C, B1, B2 and B12, protein and calcium. Fruit eaten raw, in salad, or juice. The rind contains pectin used in making jelly and candy. Medicinally, decoctions of the leaves, flowers, fruits and seeds have properties that can treat coughs, fevers, and gastric disorders, and epilepsy. The fruit is used as a purgative and antibacterial and cleansing agent. The rind is used in ointments/paste for burns. Fruits can be sold at local markets.

FARM SERVICES



Soil Improvement, Erosion Control

Erosion control: extensive, fibrous root system

BIODIVERSITY BENEFITS

Unknown

Last Updated: February 4, 2021



TREE SPECIES (SCIENTIFIC NAME)

Citrus medica

ENGLISH COMMON NAME

Citron

INDONESIAN COMMON NAME

Jeruk sukade, Sitrun

TREE FAMILY

RUTACEAE

AVERAGE LEAF SIZE (CM)

12cm × **3-4cm**
Length Width

DISTRIBUTION

 **EXOTIC IN INDONESIA**

ELEVATIONAL RANGE (M)

0-1300m

TREE HEIGHT

SHRUB (1-10M)



NATIVE TO

Region: Asia
Myanmar

EXOTIC IN

SE Asia: Laos, Vietnam
Indonesia: Borneo, Java, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM

 **ROBUSTA**  **ARABICA**

COFFEE IMPACT

 **MAY COMPETE WITH COFFEE**

TREE MANAGEMENT

Regularly attacked by Citrus Greening Citrus Vascular Phloem Disease (CPVD), especially at lower altitudes (<1000 masl) but less affected by CVPD at higher altitudes (>1000 masl). Able to withstand dry periods and poor soil.

REGENERATION

Unknown

CULTIVATION

 **PLANTED**

PREVALENCE

 **COMMON IN COFFEE AGROFORESTRY**

TREE BENEFITS AND USES

FARMER USES



Medicinal, Ceremonial

Used in treatment of asthma, arthritis, headache, stomachache, intestinal parasites, and certain psychological distress (e.g. possession by evil spirits). Decoctions of the roots are reportedly used to treat respiratory problems and backache. Can be sold at local markets.

FARM SERVICES

Unknown

BIODIVERSITY BENEFITS

Unknown

Last Updated: April 27, 2021

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TREE SPECIES (SCIENTIFIC NAME)

Cocos nucifera

ENGLISH COMMON NAME

Coconut

INDONESIAN COMMON NAME

Kelapa

TREE FAMILY

ARECACEAE

AVERAGE LEAF SIZE (CM)

550cm × **125cm**
Length Width

ELEVATIONAL RANGE (M)

520–900m

TREE HEIGHT

MEDIUM (20–35M)



DISTRIBUTION

EXOTIC IN INDONESIA

NATIVE TO

Region: Asia, Oceania

Papua New Guinea, Philippines

Indonesia: Maluku Islands, New Guinea

EXOTIC IN

SE Asia: Cambodia, Laos, Malaysia, Myanmar, Singapore, Thailand, Vietnam

Indonesia: Borneo, Java, Lesser Sunda Islands, Sulawesi, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM

ROBUSTA **ARABICA**

COFFEE IMPACT

Unknown

REGENERATION

Unknown

CULTIVATION

PLANTED

TREE MANAGEMENT

Plant at 7 x 7 m-10 x 10 m or 48 to 70 trees/acre. Requires full sun. Water newly planted trees immediately and frequently until well established. After establishment water (at least 2.5 cm) with rain or irrigation. If integrating cattle, mulch around the tree to help retain soil moisture and restrict weed growth. About 12% of the old trees (over 60 years old) should be felled each year to completely renovate old stands within 8 years. Fronds, logs and stumps may need to be removed to control the rhinoceros beetle (*Oryctes rhinoceros*, *Q. moceros*). Able to withstand dry periods and poor soil but rocky, laterite or stagnant soils are unsuitable. Long lived tree. Requires a hot, moist climate and deep alluvial or loamy soil, thriving especially near the coast.

PREVALENCE

COMMON IN COFFEE AGROFORESTRY

TREE BENEFITS AND USES

FARMER USES



Food, Fuelwood, Lumber, Medicinal, Product

Non-wood products used for crafts. The tree's oil, fruit, coconut sugar, and beverages are used and consumed. It can be sold at market and can produce year round.

FARM SERVICES

Unknown

BIODIVERSITY BENEFITS

Unknown

Last Updated: February 4, 2021

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TREE SPECIES (SCIENTIFIC NAME)

Cordyline fruticosa

ENGLISH COMMON NAME

Ti plant

INDONESIAN COMMON NAME

Jeluang, Hanjuang, Puding merah

TREE FAMILY

ASPAGACEAE

AVERAGE LEAF SIZE (CM)

52.5cm × **7.5cm**
Length Width

DISTRIBUTION



NATIVE TO INDONESIA

ELEVATIONAL RANGE (M)

0–1200m

TREE HEIGHT

SHRUB (1–10M)



NATIVE TO

Region: Asia, Oceania

Indonesia: New Guinea, Sulawesi, Sumatra

EXOTIC IN

Indonesia: Java, Lesser Sunda Islands

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM



ROBUSTA



ARABICA

COFFEE IMPACT

Unknown

TREE MANAGEMENT

Propagated by stem pieces or very rare reproductive seed events. Likely regenerates after fire from buried rhizomes. Favors open areas and has high light requirement. Can be dispersed by flood water.

REGENERATION



REGENERATES NATURALLY

CULTIVATION



PLANTED

PREVALENCE

Unknown

TREE BENEFITS AND USES

FARMER USES



Ornamental

The plants are used to form hedges and mark land boundaries. The leaves are used in medicines for many ailments.

FARM SERVICES

Unknown

BIODIVERSITY BENEFITS

Unknown

Last Updated: February 4, 2021

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TREE SPECIES (SCIENTIFIC NAME)

Dalbergia latifolia

ENGLISH COMMON NAME

Black Rosewood

INDONESIAN COMMON NAME

Sonokeling, Sonosungu

TREE FAMILY

FABACEAE

AVERAGE LEAF SIZE (CM)

6-7cm × **3-4cm**
Length Width

DISTRIBUTION

NATIVE TO INDONESIA

ELEVATIONAL RANGE (M)

0-1500m

TREE HEIGHT

MEDIUM (20-35M)



NATIVE TO

Region: Asia

Indonesia: Java, Sumatra

EXOTIC IN

SE Asia: Malaysia, Philippines, Singapore

Indonesia: Borneo, Lesser Sunda Islands, Sulawesi

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM

ROBUSTA **ARABICA**

COFFEE IMPACT

BENEFICIAL TO COFFEE

REGENERATION

Unknown

CULTIVATION

PLANTED

TREE MANAGEMENT

Propagated by seed, root cutting, or coppicing. Can plant seed directly under moist conditions with good weed control. Soak seed in cool water for 12-24 hours to speed germination. Can plant root cuttings directly in the field or raise in a nursery for future transplanting. Transplant nursery grown seedlings to the field after 6 months. Plant at 3x1 to 6x2 m. Weed regularly until trees can withstand weed competition. Loosen soil around seedlings to improve growth before weeds become dense. Can be harvested at 30-40 years.

PREVALENCE

COMMON IN COFFEE AGROFORESTRY

TREE BENEFITS AND USES

FARMER USES



Livestock Forage, Fuelwood, Lumber, Medicinal, Product

The wood is fragrant, very durable, generally highly resistant to attack by termites and fungi, difficult to work because of its high density, and is used to make premium-grade furniture, paneling, veneers, joinery, and tools and crafts such as knife handles, musical instruments, and agricultural implements. Medicines are made from the tannins in the bark to treat diarrhea, worms, indigestion, and leprosy. The tree is used for shade, its tannins also produce an appetizer, and it produces a honey that is dark amber and strong flavored.

FARM SERVICES



Coffee Shade, Soil Improvement, Erosion Control, Coffee Productivity, Nitrogen Fixation

Soil improvement: leaf litter decomposes slowly releasing nutrients gradually and it is used as a mulch

BIODIVERSITY BENEFITS

Unknown

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TREE SPECIES (SCIENTIFIC NAME)

Dendrocalamus asper

ENGLISH COMMON NAME

Giant bamboo

INDONESIAN COMMON NAME

Bambu petung, Awi bitung (Sundanese), Buluh batung (Batak), Pring Petung (Javanese)

TREE FAMILY

POACEAE

AVERAGE LEAF SIZE (CM)

30cm × **2.5cm**
Length Width

DISTRIBUTION



NATIVE TO INDONESIA

ELEVATIONAL RANGE (M)

0-1500M

TREE HEIGHT

MEDIUM (20-35M)



NATIVE TO

Region: Asia

Laos, Malaysia, Myanmar, Papua New Guinea, Philippines, Singapore, Thailand, Vietnam

Indonesia: Borneo, Java, Lesser Sunda Islands, Maluku Islands, New Guinea, Sulawesi, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM



ROBUSTA



ARABICA

COFFEE IMPACT

Unknown

TREE MANAGEMENT

Propagated by rhizome or branch cuttings. Plant after roots have developed at 5-10 m x 5-10 m spacing before or during first half of rainy season. Grows best in heavy, well drained soils. Watering of young plants required. Mulching increases production of young shoots. Fertilize mature clumps yearly (one year with 100-300 kg/ha of 15-15-15 NPK and the next year with 50-60 kg/clump of manure) to improve soil texture and fertility

REGENERATION



REQUIRES PROPAGATION

CULTIVATION



PLANTED

PREVALENCE

Unknown

TREE BENEFITS AND USES

FARMER USES



Food, Lumber, Product

Used to make stipes for construction, and as building material for houses and bridges. The young and tender shoots ("rebung") are consumed as a vegetable. The upper internodes of the culm, which are longer than the lowermost ones, are used as containers for water or to collect juice being tapped from palm inflorescences.

FARM SERVICES

Unknown

Maintains water regulation and quantity.

BIODIVERSITY BENEFITS

Unknown

Last Updated: April 26, 2021

Image: <http://specimens.kew.org/herbarium/K000290798> The Herbarium Catalogue, Royal Botanic Gardens, Kew. Published on the Internet <http://www.kew.org/herbcat> [accessed on 10 12 2020].



TREE SPECIES (SCIENTIFIC NAME)

Dendrocnide stimulans

ENGLISH COMMON NAME

Wood Nettle

INDONESIAN COMMON NAME

Pulus

TREE FAMILY

URTICACEAE

AVERAGE LEAF SIZE (CM)

20-24cm × **4-5cm**
Length Width

DISTRIBUTION



NATIVE TO INDONESIA

ELEVATIONAL RANGE (M)

0-1200m

TREE HEIGHT

SMALL (10-20M)



NATIVE TO

Region: Asia

Laos, Malaysia, Philippines, Singapore, Thailand, Vietnam

Indonesia: Borneo, Java, Lesser Sunda Islands, Maluku Islands, Sulawesi, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM



ROBUSTA

COFFEE IMPACT

Unknown

TREE MANAGEMENT

Regenerates naturally and seedlings harvested for human uses

REGENERATION



REGENERATES NATURALLY

CULTIVATION



PLANTED

PREVALENCE

Unknown

TREE BENEFITS AND USES

FARMER USES

Unknown

FARM SERVICES



Soil Improvement

BIODIVERSITY BENEFITS

Unknown

Last Updated: April 27, 2021

Image: <http://specimens.kew.org/herbarium/K001089518> The Herbarium Catalogue, Royal Botanic Gardens, Kew. Published on the Internet <http://www.kew.org/hercat> [accessed on 10 12 2020].



TREE SPECIES (SCIENTIFIC NAME)

Dimocarpus longan

ENGLISH COMMON NAME

Longan

INDONESIAN COMMON NAME

Kelengkeng, lhau

TREE FAMILY

SAPINDACEAE

AVERAGE LEAF SIZE (CM)

24cm × **10.75cm**
Length Width

DISTRIBUTION

EXOTIC IN INDONESIA

ELEVATIONAL RANGE (M)

150–450m

TREE HEIGHT

LARGE (> 35M)



NATIVE TO

Region: Asia

Cambodia, Malaysia, Myanmar, Singapore, Thailand, Vietnam

EXOTIC IN

SE Asia: Laos, Philippines

Indonesia: Borneo, Java, Lesser Sunda Islands, New Guinea, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM

ROBUSTA **ARABICA**

COFFEE IMPACT

Unknown

REGENERATION

REGENERATES NATURALLY

CULTIVATION

PLANTED

TREE MANAGEMENT

Propagated by "air layering" (i.e. rooting from branches/stems) during rainy season. Roots develop in 2.5 months and are nursed in the shade for 6-12 months after separation. Planted at 6 m x 6 m to 12 m x 12 m. Rooted seedlings should be planted close to the young trees to improve stability. Trees should be supported by permanent bamboo props with soil mounded around the trunk. Thrives on rich sandy loams and oolitic limestone. Pruning is essential to allow more light into interior of the tree and to limit number of main branches and flower-bearing twigs (3/4 of flower spikes in cluster should be removed) and fruit clusters thinned to improve size and quality. Crown should be maintained at a height of at least 1 m. Mulching and supplemental irrigation recommended due to heavy water requirement from flowering until shortly before harvest. Once trees are dormant at the end of growing season rainfall may trigger a new flush of shoot growth, resulting in failure of flowering.

PREVALENCE

Unknown

TREE BENEFITS AND USES

FARMER USES



Food, Fuelwood, Medicinal, Product

Preferred fuelwood. Fruit are mainly eaten fresh, but can be canned in its own juice with little or no sugar. Canned longans retain their individual flavor better than do rambutan or lychee. They can be preserved dry and used to prepare a refreshing drink. A liqueur is made by macerating the longan flesh in alcohol. The seeds, with high saponin content, are used as a shampoo. Seed and fruit flesh of longan have medicinal uses, and the leaves contain quercetin and quercitrin. Honeybees only fed with this tree's nectar produces a premium honey product that can be sold for an expensive price.

FARM SERVICES

Unknown

BIODIVERSITY BENEFITS

YES

Flowers and nectar are an important food source for honeybees. Mostly pollinated by stingless bee.

Last Updated: April 28, 2021

Image: Isner manalu

TREE SPECIES (SCIENTIFIC NAME)

Durio kutejensis

ENGLISH COMMON NAME

Yellow Durian

INDONESIAN COMMON NAME

Durian Pulu, Sekawi (kalimantan)

TREE FAMILY

MALVACEAE

AVERAGE LEAF SIZE (CM)

21.5cm × **7.5cm**
Length Width

DISTRIBUTION



NATIVE TO INDONESIA

ELEVATIONAL RANGE (M)

0-800m

TREE HEIGHT

MEDIUM (20-35M)



NATIVE TO

Region: Asia

Indonesia: Borneo

EXOTIC IN

Indonesia: Java

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM



COFFEE

COFFEE IMPACT

Unknown

TREE MANAGEMENT

Natural regeneration is limited. Cultivated trees start fruiting when 4-5 m tall

REGENERATION



REGENERATES NATURALLY

CULTIVATION



PLANTED

PREVALENCE



COMMON IN COFFEE AGROFORESTRY

TREE BENEFITS AND USES

FARMER USES



Food, Lumber

Fruit is consumed and both the fruit and wood have promising economic value.

FARM SERVICES

Unknown

BIODIVERSITY BENEFITS

✓ **YES**

IUCN listing of vulnerable

Last Updated: April 26, 2021



TREE SPECIES (SCIENTIFIC NAME)

Durio oxleyanus

ENGLISH COMMON NAME

Red-fleshed Durian

INDONESIAN COMMON NAME

Durian daun

TREE FAMILY

MALVACEAE

AVERAGE LEAF SIZE (CM)

13.5cm × **5cm**
Length Width

DISTRIBUTION



NATIVE TO INDONESIA

ELEVATIONAL RANGE (M)

0–1000m

TREE HEIGHT

LARGE (> 35M)



NATIVE TO

Region: Asia

Malaysia, Singapore

Indonesia: Borneo, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM



COFFEE

COFFEE IMPACT

Unknown

TREE MANAGEMENT

Seeds dispersed by animals

REGENERATION



REGENERATES NATURALLY

CULTIVATION



PLANTED

PREVALENCE

Unknown

TREE BENEFITS AND USES

FARMER USES



Food, Medicinal, Product

The fruit is consumed, the small covering around the seed is edible and sweet, and the tree also produces latex. Timber is used for planks in house building. Stems are used to treat gynecological problems, an extract from the bark is taken to treat malaria, and grated seed is applied to ulcerations and wounds

FARM SERVICES

Unknown

BIODIVERSITY BENEFITS

Unknown

Last Updated: April 26, 2021

Image: <http://specimens.kew.org/herbarium/K000671519>



TREE SPECIES (SCIENTIFIC NAME)

Durio zibethinus

ENGLISH COMMON NAME

Durian

INDONESIAN COMMON NAME

Durian, Ambetan (Javanese)

TREE FAMILY

MALVACEAE

AVERAGE LEAF SIZE (CM)

17.5cm × **6cm**

Length Width

ELEVATIONAL RANGE (M)

0-800m

TREE HEIGHT

LARGE (> 35M)



DISTRIBUTION



NATIVE TO INDONESIA

NATIVE TO

Region: Asia

Indonesia: Borneo, Java, Sulawesi, Sumatra

EXOTIC IN

SE Asia: Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand, Vietnam

Indonesia: Lesser Sunda Islands

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM

ROBUSTA **ARABICA**

COFFEE IMPACT

BENEFICIAL TO COFFEE

REGENERATION

REGENERATES NATURALLY

CULTIVATION

PLANTED

TREE MANAGEMENT

Propagated by seeds collected from the best fruits. Young trees should be grown under 30-50% shade until 1 m tall then gradually introduced to full sun. The first year after planting, trees should be shaped by removing shoots and thinning lateral branches. Horizontal limbs are best for bearing fruit. Dominant upright branches should be pruned to maintain 1 central leader. Mulch trees lightly on a regular basis with animal manure and water well during growing season and sparingly in winter to encourage abundant flowering in spring/early summer

PREVALENCE

COMMON IN COFFEE AGROFORESTRY

TREE BENEFITS AND USES

FARMER USES



Food, Fuelwood, Lumber, Medicinal, Product

Fruits are abundantly consumed, stamens consumed raw or boiled, immature fruit is used to make soup, and fruits are sold to local traders and can be sold commercially. Trees produce latex and yield a valuable red wood mostly used for construction and packing, but also used in furniture building, wooden shoe making, and coffin and ship building. Its roots and bark are used to treat stomachache, the leaf shoots are used to treat fever, and the bark can be burned for protection from mosquitos.

FARM SERVICES



Coffee Shade, Soil Improvement

Soil improvement: decomposed pericarp of durian fruits used as coffee fertilizer

BIODIVERSITY BENEFITS

YES

Provides bird nesting materials

Last Updated: April 26, 2021

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TREE SPECIES (SCIENTIFIC NAME)

Dysoxylum macrocarpum

ENGLISH COMMON NAME

Foul wood

INDONESIAN COMMON NAME

Jarum-jarum, Kihaji

TREE FAMILY

MELIACEAE

AVERAGE LEAF SIZE (CM)

30cm × **10cm**
Length Width

DISTRIBUTION



NATIVE TO INDONESIA

ELEVATIONAL RANGE (M)

0-1800M

TREE HEIGHT

MEDIUM (20-35M)



NATIVE TO

Region: Asia

Malaysia, Philippines, Singapore, Thailand, Vietnam

Indonesia: Borneo, Java, Sulawesi, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM



ROBUSTA

COFFEE IMPACT

Unknown

TREE MANAGEMENT

Propagated by seeds. Prefers full sun to semi shade and moderate watering

REGENERATION

Unknown

CULTIVATION



PLANTED

PREVALENCE



COMMON IN COFFEE AGROFORESTRY

TREE BENEFITS AND USES

FARMER USES



Fuelwood, Lumber

The wood is suitable for medium to heavy construction work, planking, flooring, paneling and for manufacturing high grade furniture, wood pallets, veneer, and plywood.

FARM SERVICES

Unknown

BIODIVERSITY BENEFITS

✓ **YES**

Food source for Gibbon.

Last Updated: April 26, 2021

Image: <http://specimens.kew.org/herbarium/K000657175> The Herbarium Catalogue, Royal Botanic Gardens, Kew. Published on the Internet <http://www.kew.org/hercat> [accessed on 10 12 2020].



TREE SPECIES (SCIENTIFIC NAME)

Elaeis guineensis

ENGLISH COMMON NAME

African oil palm

INDONESIAN COMMON NAME

Kelapa sawit

TREE FAMILY

ARECACEAE

AVERAGE LEAF SIZE (CM)

300-700cm × **75-175cm**
Length Width

ELEVATIONAL RANGE (M)

0-900m

TREE HEIGHT

SMALL (10-20M)



DISTRIBUTION



EXOTIC IN INDONESIA

NATIVE TO

Region: Africa

EXOTIC IN

SE Asia: Malaysia, Papua New Guinea, Singapore

Indonesia: Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM

ROBUSTA **ARABICA**

COFFEE IMPACT

BENEFICIAL TO COFFEE

REGENERATION

REGENERATES NATURALLY

CULTIVATION

PLANTED

TREE MANAGEMENT

Plant in initial spacing of 9 m in a triangular arrangement, for 140 trees/ha. Fibrous root system benefits from deep soils that are fertile, free from iron concretions, and well drained. Tolerates a range of soil pH (4-7) although neutral soils are best. Mulch in dry season to conserve moisture. Low leaves should be removed. Pollinated by the weevil (*Elaeiodobius kamerunicus*)

PREVALENCE

COMMON IN COFFEE AGROFORESTRY

TREE BENEFITS AND USES

FARMER USES



Food, Fuelwood

Palm oil is cheaper than many other vegetable oils, used for cooking, increases nutritional value of foods, and also provides heart-of-palm. It is possible to produce fuel from palm oil and the pressed fruits can also be dried and made into cakes for cooking fuel.

FARM SERVICES



Coffee Shade, Soil Improvement

BIODIVERSITY BENEFITS

YES

Honeybees are attracted to the pollen, which they collect along with nectar

Last Updated: April 27, 2021

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TREE SPECIES (SCIENTIFIC NAME)

Erythrina subumbrans

ENGLISH COMMON NAME

Erythrina

INDONESIAN COMMON NAME

Dadap

TREE FAMILY

FABACEAE

AVERAGE LEAF SIZE (CM)

12cm × **10cm**
Length Width

ELEVATIONAL RANGE (M)

0-1500M

TREE HEIGHT

MEDIUM (20-35M)



DISTRIBUTION

NATIVE TO INDONESIA

NATIVE TO

Region: Asia

Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand, Vietnam

Indonesia: Borneo, Java, Lesser Sunda Islands, Maluku Islands, Sulawesi, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM

ROBUSTA **ARABICA**

COFFEE IMPACT

BENEFICIAL TO COFFEE

REGENERATION

REGENERATES NATURALLY

CULTIVATION

PLANTED

TREE MANAGEMENT

Propagated by seed or cuttings. Roots form easily for cuttings up to 25 cm in diameter. Seeds can be sown directly when fresh or within 3-6 months of maturity. Germination rates are high, but seeds older than 6 months may require scarification. The seeds of thornless trees generally produce trees with thorns. Plant at 330 trees/ha. Prune regularly or at least once per year. Dispersed naturally by water and occasionally birds. Often pollinated by birds that eat its nectar.

PREVALENCE

COMMON IN COFFEE AGROFORESTRY

TREE BENEFITS AND USES

FARMER USES



Livestock Forage, Fuelwood, Lumber, Medicinal, Product

Very young leaves are steamed and eaten in salads in Java. A decoction of the bark is taken to treat spleen afflictions, in Indonesia, pounded young leaves are used as a poultice for women soon after giving birth and against headache, the juice of leaves is used as an eye-wash, and a decoction of the leaves is given for coughs. The tree is used for shade and its wood is utilized in canoe and raft building. The leaves are a good, palatable fodder for livestock but if eaten by rabbits it can cause sterility and death.

FARM SERVICES



Coffee Shade, Soil Improvement, Coffee Productivity, Nitrogen Fixation

Soil improvement: leaves rapidly decompose providing soil nutrients

BIODIVERSITY BENEFITS

YES

Used for foraging and perching by many bird species

Last Updated: February 4, 2021

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TREE SPECIES (SCIENTIFIC NAME)

Erythrina variegata

ENGLISH COMMON NAME

Indian Coral Tree

INDONESIAN COMMON NAME

Dadap, Dadap Blendung (Sundanese), Dadap Ayam (Javanese), Dede Bineh (Madurese)

TREE FAMILY

FABACEAE

AVERAGE LEAF SIZE (CM)

14.5cm × **17.5cm**
Length Width

DISTRIBUTION



NATIVE TO INDONESIA

ELEVATIONAL RANGE (M)

0-1200M

TREE HEIGHT

MEDIUM (20-35M)



NATIVE TO

Region: Asia, Oceania

Cambodia, Laos, Malaysia, Myanmar, Papua New Guinea, Philippines, Singapore, Thailand, Vietnam

Indonesia: Borneo, Java, Lesser Sunda Islands, Maluku Islands, New Guinea, Sulawesi, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM

ROBUSTA **ARABICA**

COFFEE IMPACT

BENEFICIAL TO COFFEE

REGENERATION

REGENERATES NATURALLY

CULTIVATION

PLANTED

TREE MANAGEMENT

Propagated by large cuttings (2-3 m long, 5-8 cm diameter) at 6-8 week intervals or by seeds that germinate in 8-10 days. Seedlings can be at a height of 30-50 cm in 8-10 weeks. In coffee, spacing of 8-10 m is used for shade. Lower branches are removed immediately after establishment if trees are used for shade. Unpruned trees may attain a height of 15-20 m in 8-10 years and forms root nodules and fixes atmospheric nitrogen. Annual rainfall should exceed 1250 mm with a mean minimum temperature of about 20 degree C and mean maximum temperature about 32 degree C

PREVALENCE

Unknown

TREE BENEFITS AND USES

FARMER USES



Livestock Forage, Lumber, Medicinal, Ornamental

The bark is used to reduce fever, to relieve toothache, to prepare teas or make a bath for skin diseases through boiling, and in a decoction to treat liver problems. A decoction of the bark and leaves is used to treat dysentery, rheumatism, and asthma and coughs in Indonesia, the leaves (fresh, as a decoction, or as an extract of dried leaves) are used to promote sleep, are applied as a poultice on sores, and are eaten or used in a lotion to promote lactation, the leaves and flowers are used to treat menstrual disorders, the roots and leaves are used to alleviate fever, the crushed seeds are used as a poultice to treat cancer, abscesses, and are boiled in water as a remedy for snakebites. The tree is used ornamentally for its variegated leaves and showy flowers, it is used for shade, and its wood has been tested as a source of pulp for the paper industry with the fiber acceptable for pulping due to its good length and high flexibility.

FARM SERVICES



Coffee Shade, Soil Improvement, Nitrogen Fixation

Soil improvement: leaves provide fertilizer

BIODIVERSITY BENEFITS

Unknown

Last Updated: February 17, 2021

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TREE SPECIES (SCIENTIFIC NAME)

Euodia latifolia/ Melicope latifolia

INDONESIAN COMMON NAME

Ki sampang

TREE FAMILY

RUTACEAE

AVERAGE LEAF SIZE (CM)

18-20cm × **5-7cm**
Length Width

DISTRIBUTION

 **UNKNOWN**

ELEVATIONAL RANGE (M)

0-600m

TREE HEIGHT

MEDIUM (20-35M)



NATIVE TO

Region: Asia
Malaysia, Myanmar, Singapore
Indonesia: Borneo, Java, Lesser Sunda Islands

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM

 **COFFEE**

COFFEE IMPACT

Unknown

TREE MANAGEMENT

Unknown

REGENERATION

Unknown

CULTIVATION

Unknown

PREVALENCE

 **COMMON IN COFFEE AGROFORESTRY**

TREE BENEFITS AND USES

FARMER USES



Lumber, Medicinal

The leaves are used in the treatment of fevers and cramps.

FARM SERVICES

Unknown

BIODIVERSITY BENEFITS

Unknown

Last Updated: May 3, 2021

Image: <http://specimens.kew.org/herbarium/K000717650> The Herbarium Catalogue, Royal Botanic Gardens, Kew. Published on the Internet <http://www.kew.org/herbcat> [accessed on 10 12 2020].



TREE SPECIES (SCIENTIFIC NAME)

Falcataria falcata

ENGLISH COMMON NAME

White albizia

INDONESIAN COMMON NAME

Sengon putih, Jeungjing (Sundanese), Sengon Laut (Javanese), Sikat (Banda)

TREE FAMILY

FABACEAE

AVERAGE LEAF SIZE (CM)

1.1cm × 0.4cm
Length Width

DISTRIBUTION



NATIVE TO INDONESIA

ELEVATIONAL RANGE (M)

0-1200M

TREE HEIGHT

LARGE (> 35M)



NATIVE TO

Region: Asia

Papua New Guinea

Indonesia: Java, Maluku Islands, New Guinea, Sulawesi, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM

ROBUSTA **ARABICA**

COFFEE IMPACT

✓ **BENEFICIAL TO COFFEE**

REGENERATION

Unknown

CULTIVATION

PLANTED

TREE MANAGEMENT

Propagated by seed. To increase germination, seeds can be soaked in boiling water for 1-3 minutes or soaking seed in concentrated sulphuric acid for 10 minutes then washing and soaking in water for 18 hours. Store seeds by air drying for 24 hours then packing in polythene bags and store at 4-8 C. Sow seeds directly in nursery, pressing them gently into the soil, and then covering with a layer of fine sand up to 1.5 cm thick. Seedlings can be transplanted after 2-2.5 months. Spacing of 2-4 m x 2-4 m for planting seedlings in the field. Thin trees to 250 trees/ha when 4-5 years old and to 150 trees/ha when 10 years old to maximize timber production. Fast growing with a cutting cycle is generally 12-15 years and a biological rotation of <15 years.

PREVALENCE

COMMON IN COFFEE AGROFORESTRY

TREE BENEFITS AND USES

FARMER USES



Livestock Forage, Fuelwood, Lumber, Product

Its wood is used in light building construction, musical instruments, toys, wooden shoes, furniture, and fences. The tree is used for shade and soil improvement, charcoal production, its leaves used as fodder for goats, and it is also used to make dye. It can be sold at local markets and is used as a long-term income source.

FARM SERVICES



Coffee Shade, Soil Improvement, Coffee Productivity, Reforestation, Nitrogen Fixation

BIODIVERSITY BENEFITS

✓ **YES**

Used for foraging and perching by many bird species

Last Updated: February 17, 2021

Image: <http://specimens.kew.org/herbarium/K000654844> The Herbarium Catalogue, Royal Botanic Gardens, Kew. Published on the Internet <http://www.kew.org/herbcat> [accessed on 10 12 2020].



TREE SPECIES (SCIENTIFIC NAME)

Ficus sp.

INDONESIAN COMMON NAME

Beringin

TREE FAMILY

MORACEAE

AVERAGE LEAF SIZE (CM)

8.5cm × 5-24cm
Length Width

DISTRIBUTION

 **NATIVE TO INDONESIA**

ELEVATIONAL RANGE (M)

Unknown

TREE HEIGHT

MEDIUM (20-35M)



NATIVE TO

Region: Africa, Americas, Asia, Europe, Oceania

Cambodia, Laos, Malaysia, Myanmar, Papua New Guinea, Philippines, Singapore, Thailand, Vietnam

Indonesia: Borneo, Java, Lesser Sunda Islands, Maluku Islands, New Guinea, Sulawesi, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM

 **ROBUSTA**

COFFEE IMPACT

Unknown

TREE MANAGEMENT

Unknown

REGENERATION

 **REQUIRES PROPAGATION**

CULTIVATION

PREVALENCE

 **COMMON IN COFFEE AGROFORESTRY**

TREE BENEFITS AND USES

FARMER USES



Fuelwood, Lumber, Product, Ceremonial

Local folklore in Lindu indicates the strangling fig trees house evil spirits. Its latex is used for glue. Often retained when other trees are cut and marks property boundaries.

FARM SERVICES

Unknown

Maintains water regulation and quantity.

BIODIVERSITY BENEFITS

 **YES**

Macaques eat fruit and young leaves. Extremely important resource for tonkean macaques, constituting up to 50% of their diet. Ficus genus is the single most important food source for Sulawesi's fruit-eating birds and mammals (Kinnaird et al. 1999); Keystone species for many frugivores.

Last Updated: April 27, 2021

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TREE SPECIES (SCIENTIFIC NAME)

Flacourtia rukam

INDONESIAN COMMON NAME

Rukam, Ganda rukem, rukam (Java), Klang tatah kutang (Borneo)

TREE FAMILY

SALICACEAE

AVERAGE LEAF SIZE (CM)

12.25cm * **6cm**
Length Width

DISTRIBUTION

NATIVE TO INDONESIA

ELEVATIONAL RANGE (M)

0-1500m

TREE HEIGHT

SMALL (10-20M)



NATIVE TO

Region: Asia

Malaysia, Papua New Guinea, Philippines, Singapore

Indonesia: Borneo, Java, Lesser Sunda Islands, Maluku Islands, New Guinea, Sulawesi, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM

ROBUSTA

COFFEE IMPACT

Unknown

TREE MANAGEMENT

Propagated by seed and germinates readily and quickly. Shoot growth occurs in synchrony. Young plants bear much larger leaves than the full-grown tree which is often sparsely foliated. In Java the trees flower between June and August. Fruit ripens after about 14 weeks. Seeds dispersed by animals. Long-lived tree of late successional forest

REGENERATION

REGENERATES NATURALLY

CULTIVATION

PLANTED

PREVALENCE

Unknown

TREE BENEFITS AND USES

FARMER USES



Food, Lumber, Medicinal, Product, Ceremonial

Produces latex. The ripe fruit can be eaten raw and is rubbed between the palms of the hand as bruising the flesh eliminates astringency. It is also served in 'rujak', a fruit salad with a spicy sauce, pickled, or sweetened with sugar to make jam or confectionaries. The young leaves are eaten raw in side dishes as a vegetable. Used for magic. Immature fruit is used to prepare traditional medicine against diarrhea and dysentery. The juice of the leaves is applied to inflamed eye-lids. The wood is hard and strong and used to make household utensils such as pestles and furniture.

FARM SERVICES

Unknown

BIODIVERSITY BENEFITS

YES

Insects are attracted by the flower

Last Updated: February 17, 2021

Image: <http://specimens.kew.org/herbarium/K000591189> The Herbarium Catalogue, Royal Botanic Gardens, Kew. Published on the Internet <http://www.kew.org/herbcat> [accessed on 10 12 2020].



TREE SPECIES (SCIENTIFIC NAME)

Flemingia macrophylla

ENGLISH COMMON NAME

Large leaf flemingia

INDONESIAN COMMON NAME

Hahapaan , Pok kepokan

TREE FAMILY

FABACEAE

AVERAGE LEAF SIZE (CM)

7-11cm × **3-6cm**
Length Width

DISTRIBUTION

NATIVE TO INDONESIA

ELEVATIONAL RANGE (M)

0-2000m

TREE HEIGHT

SHRUB (1-10M)



NATIVE TO

Region: Asia

Cambodia, Laos, Malaysia, Myanmar, Papua New Guinea, Philippines, Singapore, Thailand, Vietnam

Indonesia: Borneo, Java, Lesser Sunda Islands, New Guinea, Sulawesi, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM

COFFEE

COFFEE IMPACT

BENEFICIAL TO COFFEE

TREE MANAGEMENT

Propagated by seed. Scarification recommended before sowing to speed up and improve germination Pour a small amount of warm water (not boiling) on seeds and then soak them for 12 - 24 hours. Weed control required first 6 months. Mulching (at a rate of 3 t/ha) can effectively control weeds for ~3 months. Plants should not be cut at intervals less than 40 days but can be cut more frequently than every 3 months

REGENERATION

Unknown

CULTIVATION

PLANTED

PREVALENCE

Unknown

TREE BENEFITS AND USES

FARMER USES

Food, Medicinal

Leaves are sometimes eaten. The leaves reduce fever and are used for treating postpartum fever as well as paralysis and pain in the joints. A decoction of the leaves is used to bathe sores and swellings and the entire plant is given to relieve stomachache

FARM SERVICES



Coffee Shade, Windbreak, Soil Improvement, Erosion Control, Nitrogen Fixation, Weed Control

Soil improvement: provides mulch, moisture conservation, reduces soil temperature

BIODIVERSITY BENEFITS

Unknown

Last Updated: April 27, 2021

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TREE SPECIES (SCIENTIFIC NAME)

Garcinia mangostana

ENGLISH COMMON NAME

Mangosteen

INDONESIAN COMMON NAME

Manggis

TREE FAMILY

CLUSIACEAE

AVERAGE LEAF SIZE (CM)

20cm × **10cm**
Length Width

ELEVATIONAL RANGE (M)

0-1000M

TREE HEIGHT

MEDIUM (20-35M)



DISTRIBUTION



EXOTIC IN INDONESIA

NATIVE TO

Region: Asia
Malaysia, Singapore

EXOTIC IN

SE Asia: Cambodia, Laos, Philippines, Vietnam
Indonesia: Borneo, Java, Lesser Sunda Islands, Maluku Islands, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM

ROBUSTA **ARABICA**

COFFEE IMPACT

BENEFICIAL TO COFFEE

REGENERATION

REGENERATES NATURALLY

CULTIVATION

PLANTED

PREVALENCE

COMMON IN COFFEE AGROFORESTRY

TREE MANAGEMENT

Propagated by spontaneously growing seedlings under mother tree or by seed (if seeds they should be pre-germinated and potted). Seedling growth is slow but gradually picks up under favorable conditions (a 60 cm tall seedling with one or two pairs of branches can be raised in about 2 years). Nursery conditions should include a freely draining growing medium with high moisture retention (mixtures including shredded coconut fiber, peat, sphagnum or pine bark) and high humidity and shade (cover the nursery beds with colored polythene tunnels). Plant young trees carefully to avoid root injury water heavily. Wide spacing is recommended as dense canopy may cause sunlight competition that impacts coffee. Fertilizer accelerates seedling growth. Trees should be irrigated almost daily during the dry season. Partial shading needed for 3-5 years. Can be regularly fertilized with "well-rotted" manure (45-90 kg) and peanut meal (4.5-6.8 kg/year). The most productive trees grow on the banks of streams, lakes, ponds or canals but before blooming and during flowering, dry weather induces a good fruit set.

TREE BENEFITS AND USES

FARMER USES



Food, Fuelwood, Lumber, Medicinal, Product

The fruit is consumed and the rind can be used to stop vomiting and the latex is used to treat skin cancer. The fruit rind is also used to tan leather and as a black dye. The dark red wood is heavy, coarse, very strong, when available used in carpentry and to make rice pounders, and is a highly marketable product.

FARM SERVICES

Unknown

BIODIVERSITY BENEFITS

YES

Vegetation attract birds searching for food and nesting material

Last Updated: April 26, 2021

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TREE SPECIES (SCIENTIFIC NAME)

Garcinia parvifolia

ENGLISH COMMON NAME

Brunei cherry

INDONESIAN COMMON NAME

Asam kandis

TREE FAMILY

CLUSIACEAE

AVERAGE LEAF SIZE (CM)

3.8cm × 10cm
Length Width

DISTRIBUTION



NATIVE TO INDONESIA

ELEVATIONAL RANGE (M)

0-800m

TREE HEIGHT

MEDIUM (20-35M)



NATIVE TO

Region: Asia

Malaysia, Singapore

Indonesia: Borneo, Java, New Guinea, Sulawesi, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM



ROBUSTA

COFFEE IMPACT

Unknown

TREE MANAGEMENT

Seeds dispersed by animals. Early successional tree.

REGENERATION



REGENERATES NATURALLY

CULTIVATION

PREVALENCE

Unknown

TREE BENEFITS AND USES

FARMER USES



Food, Lumber, Product

The tree produces resin. The young sprouts and leaves are used as a vegetable/fruit and the fruits are edible but sour.

FARM SERVICES



Soil Improvement

BIODIVERSITY BENEFITS

Unknown

Last Updated: February 4, 2021

Image: <http://specimens.kew.org/herbarium/K000677664> The Herbarium Catalogue, Royal Botanic Gardens, Kew. Published on the Internet <http://www.kew.org/hercat> [accessed on 10 12 2020].



TREE SPECIES (SCIENTIFIC NAME)

Gigantochloa apus

INDONESIAN COMMON NAME

Bambu apus, Bambu tali, Pring tali, Pring apus (Javanese), Awi tali (Sundanese)

TREE FAMILY

POACEAE

AVERAGE LEAF SIZE (CM)

31cm × **5.5cm**
Length Width

DISTRIBUTION



NATIVE TO INDONESIA

ELEVATIONAL RANGE (M)

0-1500M

TREE HEIGHT

MEDIUM (20-35M)



NATIVE TO

Region: Asia

Laos, Malaysia, Myanmar, Singapore, Thailand

Indonesia: Borneo, Java, Lesser Sunda Islands

EXOTIC IN

SE Asia: Vietnam

Indonesia: Sulawesi, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM

ROBUSTA **ARABICA**

COFFEE IMPACT

BENEFICIAL TO COFFEE

REGENERATION

Unknown

CULTIVATION

PLANTED

TREE MANAGEMENT

Propagated by seed but most commonly propagated by rhizome, culm or branch cuttings. Good results are obtained with 1-year-old culm segments bearing 2 buds each. Cuttings should be set upright or at an angle and the node well covered with soil. In Indonesia, the best time for planting is from December to March. Spacing of 5-7 m squared. Normal care is required after establishment including weeding. Application of organic or chemical fertilizer increases productivity. Only culms ≥ 2 years should be harvested, preferably during the dry season (or in Indonesia between April and October) to minimize borer infestation. Competes with coffee.

PREVALENCE

Unknown

TREE BENEFITS AND USES

FARMER USES



Food, Fuelwood, Lumber, Product

Used to make cooking utensils, fishery utensils, furniture, ropes or strings, and in basketry. Its culms are durable and used as building material for roofings, walls, scaffoldings and bridges. Culms can be split into fine strips for weaving hats, baskets and other objects. When split finely and the pieces bent, the surface does not chip off. Shoots are consumed. In Java, the freshly cut shoots are buried in mud for 3-4 days to remove the bitter taste, before they are consumed as a vegetable.

FARM SERVICES

Unknown

Maintains water regulation and quantity.

BIODIVERSITY BENEFITS

Unknown

Last Updated: May 3, 2021

Image: <http://specimens.kew.org/herbarium/K000710263> The Herbarium Catalogue, Royal Botanic Gardens, Kew. Published on the Internet <http://www.kew.org/herbcat> [accessed on 10 12 2020].



TREE SPECIES (SCIENTIFIC NAME)

Gigantochloa atter

ENGLISH COMMON NAME

The black bamboo

INDONESIAN COMMON NAME

Bambu ater, Pring legi (Javanese), Awi temen (Sundanese)

TREE FAMILY

POACEAE

AVERAGE LEAF SIZE (CM)

32cm × **6cm**
Length Width

DISTRIBUTION



NATIVE TO INDONESIA

ELEVATIONAL RANGE (M)

0-1400m

TREE HEIGHT

MEDIUM (20-35M)



NATIVE TO

Region: Asia

Laos, Papua New Guinea, Philippines, Vietnam

Indonesia: Borneo, Java, Lesser Sunda Islands, Maluku Islands, New Guinea, Sulawesi, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM

ROBUSTA **ARABICA**

COFFEE IMPACT

BENEFICIAL TO COFFEE

TREE MANAGEMENT

Propagated by rhizome or culm cuttings. After a cutting is planted, it may develop up to 24 culms in 3 years. Protecting cuttings in the nursery from heavy rain. Transplant one-year-old plants when 75 cm tall, preferably at the beginning of the rainy season. Spacing of 7-8 m x 7 m, giving 180-200 clumps per ha. Competes with coffee.

REGENERATION

Unknown

CULTIVATION

PLANTED

PREVALENCE

Unknown

TREE BENEFITS AND USES

FARMER USES



Food, Lumber, Product

Shoots are consumed. The culm is often used for building material (framework, fences, and walls). It is also used to make household utensils and furniture. In West Java, it is used as a material for bamboo musical instruments.

FARM SERVICES

Unknown

Maintains water regulation and quantity.

BIODIVERSITY BENEFITS

Unknown

Last Updated: May 3, 2021

Image: <http://specimens.kew.org/herbarium/K000290801>

TREE SPECIES (SCIENTIFIC NAME)

Gigantochloa verticillata

ENGLISH COMMON NAME

Whorled bamboo

INDONESIAN COMMON NAME

Bambu gombong

TREE FAMILY

POACEAE

AVERAGE LEAF SIZE (CM)

24-47cm × **3.5-7cm**
Length Width

DISTRIBUTION



NATIVE TO INDONESIA

ELEVATIONAL RANGE (M)

0-1200M

TREE HEIGHT

MEDIUM (20-35M)



NATIVE TO

Region: Asia

Malaysia, Myanmar, Singapore, Thailand, Vietnam

Indonesia: Borneo, Java, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM

ROBUSTA **ARABICA**

COFFEE IMPACT

BENEFICIAL TO COFFEE

TREE MANAGEMENT

Only propagated by rhizome, culm or branch cuttings. Cuttings from flowering clumps should be avoided because they will start flowering soon after planting. Culm cuttings have a survival rate of nearly 100%. Plant at 8 m x 8 m. Grows best in areas with high rainfall. To promote regeneration, loosen and mulch the base of the harvested culms. Competes with coffee.

REGENERATION

REGENERATES NATURALLY

CULTIVATION

PLANTED

PREVALENCE

Unknown

TREE BENEFITS AND USES

FARMER USES



Food, Fuelwood, Lumber

The young shoots are eaten as a vegetable

FARM SERVICES

Unknown

Maintains water regulation and quantity.

BIODIVERSITY BENEFITS

Unknown

Last Updated: May 3, 2021



TREE SPECIES (SCIENTIFIC NAME)

Gliricidia sepium

INDONESIAN COMMON NAME

Johar Kandang, Gliricidia, Gamal, Ki Hujan

TREE FAMILY

FABACEAE

AVERAGE LEAF SIZE (CM)

15-35cm × **4-10cm**
Length Width

DISTRIBUTION

 **EXOTIC IN INDONESIA**

ELEVATIONAL RANGE (M)

0-1600m

TREE HEIGHT

SMALL (10-20M)



NATIVE TO

Region: Americas

EXOTIC IN

SE Asia: Malaysia, Myanmar, Papua New Guinea, Philippines, Singapore
Indonesia: Borneo, Java, Lesser Sunda Islands, New Guinea, Sulawesi, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM

 **ROBUSTA**  **ARABICA**

COFFEE IMPACT

 **BENEFICIAL TO COFFEE**

TREE MANAGEMENT

Propagated by seed and seed maintains viability for 12 months in open storage. Plant at 330 trees/ha. Prune at 0.3-1.5 m to stimulate leaf production and prune crown at 2 m or above for optimal wood biomass production. Coppice if primary objective is fuelwood production. Fertilize with organic materials.

REGENERATION

Unknown

CULTIVATION

 **PLANTED**

PREVALENCE

 **COMMON IN COFFEE AGROFORESTRY**

TREE BENEFITS AND USES

FARMER USES



Livestock Forage, Fuelwood, Lumber, Ornamental

The tree is used for shade, for fencing, as a support tree for pepper, for soil improvement and restoring soil nutrients as a fertilizer, and its pruning residue is used for fuelwood. It is also used as fodder for goats. It is an important source of income at times of low coffee prices.

FARM SERVICES



Coffee Shade, Soil Improvement, Coffee Productivity, Nitrogen Fixation

Soil improvement: high leaf decomposition rate, moisture retention, reduces soil erosion, mitigates drought stress

BIODIVERSITY BENEFITS

 **YES**

Used for foraging and perching by many bird species

Last Updated: April 27, 2021

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TREE SPECIES (SCIENTIFIC NAME)

Gmelina arborea

ENGLISH COMMON NAME

White Teak

INDONESIAN COMMON NAME

Jati putih

TREE FAMILY

LAMIACEAE

AVERAGE LEAF SIZE (CM)

17.5cm × **13.5cm**
Length Width

ELEVATIONAL RANGE (M)

0–1200M

TREE HEIGHT

MEDIUM (20–35M)



DISTRIBUTION

 **EXOTIC IN INDONESIA**

NATIVE TO

Region: Asia
Cambodia, Laos, Myanmar, Thailand, Vietnam

EXOTIC IN

SE Asia: Malaysia, Philippines, Singapore
Indonesia: Borneo, Java, Sulawesi, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM

 **ROBUSTA**  **ARABICA**

COFFEE IMPACT

Unknown

REGENERATION

 **REGENERATES NATURALLY**

CULTIVATION

 **PLANTED**

TREE MANAGEMENT

Propagated by sprouts, coppice shoots, and seeds. Resistant to pests outside its natural range and browsing tolerant. Suitable species for agroforestry systems and an ideal fuelwood species. Responds positively to weeding and benefits from irrigation. Fast growing and demands full sun. Only regenerates naturally in the open or on the edge of forests

PREVALENCE

Unknown

TREE BENEFITS AND USES

FARMER USES



Lumber, Medicinal, Product

Its wood is regarded as a valuable general-purpose wood because of its stability and it produces good quality pulp for fiber and can be used for furniture, matches, light construction, particle board, and paper. When first cut, the wood is yellowish to reddish-white but turns light russet or yellowish-brown and seasons well but is slow to dry both in the open and in a kiln. Bark, leaves, and roots contain traces of alkaloids and are used medicinally and both the fruit and bark are used to treat bilious fever.

FARM SERVICES



Reforestation

BIODIVERSITY BENEFITS

Unknown

Last Updated: February 17, 2021

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TREE SPECIES (SCIENTIFIC NAME)

Gnetum gnemon

ENGLISH COMMON NAME

Buko

INDONESIAN COMMON NAME

Melinjo

TREE FAMILY

GNETACEAE

AVERAGE LEAF SIZE (CM)

16-22cm × **15cm**
Length Width

ELEVATIONAL RANGE (M)

0-1200M

TREE HEIGHT

SMALL (10-20M)



DISTRIBUTION



NATIVE TO INDONESIA

NATIVE TO

Region: Asia, Oceania

Malaysia, Myanmar, Papua New Guinea, Philippines, Singapore, Vietnam

Indonesia: Borneo, Lesser Sunda Islands, Maluku Islands, New Guinea, Sulawesi

EXOTIC IN

Indonesia: Java, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM

ROBUSTA **ARABICA**

COFFEE IMPACT

BENEFICIAL TO COFFEE

REGENERATION

REGENERATES NATURALLY

CULTIVATION

PLANTED

TREE MANAGEMENT

Propagated by seedling. Seedlings available from fruit/commodity nurseries. Able to withstand dry periods and poor soil. Seeds dispersed by animals. Long lived tree.

PREVALENCE

COMMON IN COFFEE AGROFORESTRY

TREE BENEFITS AND USES

FARMER USES



Food, Lumber, Product

Vegetable, seeds, pods, leaves, and inflorescences are consumed either raw or boiled. It is used to make dye and a high quality fiber is extracted from the inner bark that is used to make bow strings and fishing lines and nets because it is durable in sea water. Can be sold at local market.

FARM SERVICES



Coffee Shade, Soil Improvement, Erosion Control, Reforestation

BIODIVERSITY BENEFITS

YES

Used by Javan loris as connectivity

Last Updated: April 28, 2021

Image: Isner manalu



TREE SPECIES (SCIENTIFIC NAME)

Hevea brasiliensis

ENGLISH COMMON NAME

Rubber Tree

INDONESIAN COMMON NAME

Karet

TREE FAMILY

EUPHORBIACEAE

AVERAGE LEAF SIZE (CM)

27cm × **8.25cm**
Length Width

ELEVATIONAL RANGE (M)

0-500m

TREE HEIGHT

LARGE (> 35M)



DISTRIBUTION



EXOTIC IN INDONESIA

NATIVE TO

Region: Americas

EXOTIC IN

SE Asia: Cambodia, Malaysia, Papua New Guinea, Singapore, Thailand

Indonesia: Borneo, Java, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM

ROBUSTA **ARABICA**

COFFEE IMPACT

MAY COMPETE WITH COFFEE

REGENERATION

REQUIRES PROPAGATION

CULTIVATION

PLANTED

PREVALENCE

COMMON IN COFFEE AGROFORESTRY

TREE BENEFITS AND USES

FARMER USES



Food, Fuelwood, Lumber, Product

The latex is used for rubber and as a crop, and the oil and fruit are used and consumed. Its wood is used to make furniture, chipboard, medium density fiber board, parquet and many other wood products. The seeds contain a semi-drying oil that can be used in making paints and soap.

TREE MANAGEMENT

Propagated by seeds or bud grafting. Seeds only viable for a short period and should be sown immediately after harvesting. Germinate in shaded beds and transfer to the nursery soon after germination where they are either planted in the ground or in perforated polythene bag. Weed control required and legume covering recommended after transplanting. Intolerant of swampy conditions. Harvest and replant after 30-35 years to maintain economic viability. Prune and remove unwanted suckers. Mulch before the end of the late rains. Fertilizer recommended. Trees can be tapped when 50-70% of the trees measure 150 cm height from the base with a girth size of at least 45 cm (15 cm diameter). Bark is cut from top left (at 150 cm height) to bottom right

FARM SERVICES

Unknown

BIODIVERSITY BENEFITS

Unknown

Last Updated: February 4, 2021

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TREE SPECIES (SCIENTIFIC NAME)

Hibiscus tiliaceus

ENGLISH COMMON NAME

Coast cottonwood

INDONESIAN COMMON NAME

Waru

TREE FAMILY

MALVACEAE

AVERAGE LEAF SIZE (CM)

6-22cm × **6-23cm**
Length Width

DISTRIBUTION



NATIVE TO INDONESIA

ELEVATIONAL RANGE (M)

0-800m

TREE HEIGHT

MEDIUM (20-35M)



NATIVE TO

Region: Africa, Asia, Oceania

Cambodia, Laos, Malaysia, Myanmar, Papua New Guinea, Philippines, Singapore, Thailand, Vietnam

Indonesia: Java, Lesser Sunda Islands, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM

ROBUSTA

COFFEE IMPACT

Unknown

TREE MANAGEMENT

Planted on or near sandy shores

REGENERATION

REGENERATES NATURALLY

CULTIVATION

PLANTED

PREVALENCE

Unknown

TREE BENEFITS AND USES

FARMER USES



Fuelwood, Lumber, Medicinal, Ornamental, Product

The bark used for ropes, the leaves used as wrappers, and the wood used for craft wood, dye, and marking boundaries. The fresh macerated bark makes water mucilaginous, and is prescribed to treat dysentery, the leaves are used as a laxative and to treat sore throat, pneumonia, cough, tuberculosis, and diarrhea, the pulverized roots are used to induce vomiting, and both the leaves and root are crushed in water and drunk to ease labor.

FARM SERVICES

Unknown

BIODIVERSITY BENEFITS

Unknown

Last Updated: April 27, 2021

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TREE SPECIES (SCIENTIFIC NAME)

Hopea mengarawan

INDONESIAN COMMON NAME

Damar mata kucing , Merawan benar (Sumatra, Kalimantan), Chengal Bulu (Sumatra), Bangkirai Telor (East Kalimantan)

TREE FAMILY

DIPTEROCARPACEAE

AVERAGE LEAF SIZE (CM)

9cm × **3.75cm**
Length Width

DISTRIBUTION

 **NATIVE TO INDONESIA**

ELEVATIONAL RANGE (M)

0-500m

TREE HEIGHT

LARGE (> 35M)



NATIVE TO

Region: Asia
Malaysia, Singapore
Indonesia: Borneo, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM

 **ROBUSTA**

COFFEE IMPACT

Unknown

TREE MANAGEMENT

Unknown

REGENERATION

Unknown

CULTIVATION

PREVALENCE

 **COMMON IN COFFEE AGROFORESTRY**

TREE BENEFITS AND USES

FARMER USES



Lumber

It is an important source of merawan timber. It produces a dammar that is considered good quality, and the bark is used for roofing traditional houses.

FARM SERVICES

Unknown

BIODIVERSITY BENEFITS

Unknown

Last Updated: February 17, 2021

Image: <http://specimens.kew.org/herbarium/K000700683> The Herbarium Catalogue, Royal Botanic Gardens, Kew. Published on the Internet <http://www.kew.org/herbcat> [accessed on 10 12 2020].



TREE SPECIES (SCIENTIFIC NAME)

Horsfieldia grandis

INDONESIAN COMMON NAME

Deraya, Dara-dara, Kumpang, Kumpang api, Pendarahan (Borneo)

TREE FAMILY

MYRISTICACEAE

AVERAGE LEAF SIZE (CM)

32-40cm × **20-22cm**
Length Width

DISTRIBUTION



NATIVE TO INDONESIA

ELEVATIONAL RANGE (M)

0-600m

TREE HEIGHT

MEDIUM (20-35M)



NATIVE TO

Region: Asia

Malaysia, Singapore

Indonesia: Borneo, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM



COFFEE

COFFEE IMPACT

Unknown

TREE MANAGEMENT

Seeds dispersed by animals. Intermediate successional tree found in native and regenerating forest.

REGENERATION



REGENERATES NATURALLY

CULTIVATION

PREVALENCE

Unknown

TREE BENEFITS AND USES

FARMER USES



Food, Fuelwood, Lumber, Medicinal, Ceremonial

The fruits are said to be edible after beating. It is a preferred fuelwood for its high calorific value and less toxic smoke and the wood is locally used to carve rice-field (padi) guards. The stem is used for ritual healing and exorcism and the sap is used to treat broken lips and mouth ulcers.

FARM SERVICES

Unknown

BIODIVERSITY BENEFITS

Unknown

Last Updated: April 27, 2021

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TREE SPECIES (SCIENTIFIC NAME)

Indigofera sp.

TREE FAMILY

FABACEAE

AVERAGE LEAF SIZE (CM)

2-3cm × **0.5-1cm**
Length Width

DISTRIBUTION

 **NATIVE TO INDONESIA**

ELEVATIONAL RANGE (M)

0-1500M

TREE HEIGHT

UNKNOWN

NATIVE TO

Region: Africa, Americas, Asia, Oceania

Cambodia, Laos, Malaysia, Myanmar, Papua New Guinea, Philippines, Singapore, Thailand, Vietnam

Indonesia: Borneo, Java, Lesser Sunda Islands, New Guinea, Sulawesi, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM

 **ROBUSTA**

COFFEE IMPACT

 **BENEFICIAL TO COFFEE**

TREE MANAGEMENT

Propagated by seeds, which require scarification or by cuttings. Sowed into seed beds or directly into field at 60 cm spacing with 3-4 seeds per hole. Seeds germinate in 4 days. Cuttings should be 30 cm long, cut 2-3 days before planting, and planted with 2-3 cuttings per hole. Weeding necessary 1 month before and after planting. Cover crop should be cut back every 3-5 months and replaced after 2 years.

REGENERATION

Unknown

CULTIVATION

 **PLANTED**

PREVALENCE

 **COMMON IN COFFEE AGROFORESTRY**

TREE BENEFITS AND USES

FARMER USES



Livestock Forage, Medicinal, Product

Widely used as a source of the blue dye indigo throughout the tropics and this dye can be sold. The tree is recommended as a cover crop and for green manure, especially in coffee plantations. The leaves of *Indigofera arrecta* and *Indigofera tinctoria* are used in traditional medicines for epilepsy and nervous disorders and to heal sores and ulcers.

FARM SERVICES



Soil Improvement, Nitrogen Fixation

BIODIVERSITY BENEFITS

Unknown

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TREE SPECIES (SCIENTIFIC NAME)

Lansium domesticum

ENGLISH COMMON NAME

Longkong

INDONESIAN COMMON NAME

Duku, Langsat, Pisitan, Kokosan

TREE FAMILY

MELIACEAE

AVERAGE LEAF SIZE (CM)

40cm × **14-16cm**
Length Width

DISTRIBUTION

NATIVE TO INDONESIA

ELEVATIONAL RANGE (M)

0-800m

TREE HEIGHT

MEDIUM (20-35M)



NATIVE TO

Region: Asia

Malaysia, Philippines, Singapore, Thailand

Indonesia: Borneo, Java, Lesser Sunda Islands, Sulawesi, Sumatra

EXOTIC IN

SE Asia: Cambodia, Laos, Myanmar, Papua New Guinea, Vietnam

Indonesia: Maluku Islands, New Guinea

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM

ROBUSTA **ARABICA**

COFFEE IMPACT

Unknown

TREE MANAGEMENT

Propagated by seed or from natural seedlings that regenerate under mature trees. Propagation by cutting, grafting, and air layering also possible. Germination and seedling vigor improve with seed size. Only large seeds should be used in nurseries. Early seedling growth is very slow. Under intensive care, it takes 10-18 months to get a pencil-thick stem suited for grafting or planting, but plants may require up to 36 months to develop in most nurseries. Seedlings should be place in pots and planted when 1 m tall.

REGENERATION

REGENERATES NATURALLY

CULTIVATION

PLANTED

PREVALENCE

COMMON IN COFFEE AGROFORESTRY

TREE BENEFITS AND USES

FARMER USES



Food, Fuelwood, Lumber, Medicinal, Product

The leaf and seeds are used as an anti-malarial treatment, the wood and bark used to treat diarrhea, malaria, and typhoid, and this species is considered interesting from a pharmacological perspective due to its rich active compounds which have potential to be developed into new drugs. The wood is used for house construction, also produces latex, the dried fruit peels are burnt to drive mosquitos away, and it is a preferred fuelwood due to its high calorific value and less toxic smoke. The fruit is consumed and 40-80% of yearly production can be sold at market and commercially.

FARM SERVICES

Unknown

BIODIVERSITY BENEFITS

YES

Used for foraging and perching by many bird species

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TREE SPECIES (SCIENTIFIC NAME)

Leucaena cultivars

(diversifolia, leucocephala, and hybrids)

ENGLISH COMMON NAME

River Tamarind

INDONESIAN COMMON NAME

Lamtoro, Lamtoro PG 79, Mlanding (Javanese), Pelending (Sundanese), Pete selong (Sundanese)

TREE FAMILY

FABACEAE

AVERAGE LEAF SIZE (CM)

0.495cm × 0.09cm
Length Width

DISTRIBUTION

EXOTIC IN INDONESIA

ELEVATIONAL RANGE (M)

0-1500M

TREE HEIGHT

SMALL (10-20M)



NATIVE TO

Region: Americas

EXOTIC IN

SE Asia: Cambodia, Laos, Malaysia, Papua New Guinea, Philippines, Singapore, Thailand

Indonesia: Java, Lesser Sunda Islands, New Guinea, Sulawesi, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM

ROBUSTA ARABICA

COFFEE IMPACT

✓ BENEFICIAL TO COFFEE

TREE MANAGEMENT

Propagated by directly sowing seed or by transplanting seedlings. Pre-soak seeds in warm water. Plant at 2 x 2.5 m spacing and thin to 4 x 5 m when mature. Prune every 6-8 weeks or cut back to 0.5-1.0 m during the growing season to feed fresh leaves to livestock. Prefers slightly acidic, fertile soils.

REGENERATION

Unknown

CULTIVATION

PLANTED

PREVALENCE

COMMON IN COFFEE AGROFORESTRY

TREE BENEFITS AND USES

FARMER USES



Food, Livestock Forage, Fuelwood, Lumber, Ornamental

The cultivar, Lamtoro PG79, is the primary shade tree propagated and promoted for coffee shade in Indonesia by government and agronomy extension services. Leaves and fruit obtained during pruning are used as fodder for cattle and other livestock and are also used human consumption as vegetables, with the seeds and pods also used and consumed. The species is used for firewood and charcoal. Large logs are also used in construction and as poles.

FARM SERVICES



Coffee Shade, Soil Improvement, Erosion Control, Coffee Productivity, Nitrogen Fixation

BIODIVERSITY BENEFITS

✓ YES

Used for foraging and perching by many bird species. Used by Javan loris for connectivity. However some cultivars have invasive properties.

Last Updated: May 10, 2021

Image: Specimen Oliver Whaley et al. 5361 Image by Oliver Whaley Digital Image © Board of Trustees, RBG Kew <http://creativecommons.org/licenses/by/3.0/>



TREE SPECIES (SCIENTIFIC NAME)

Liquidambar excelsa

INDONESIAN COMMON NAME

Rasamala

TREE FAMILY

ALTINGIACEAE

AVERAGE LEAF SIZE (CM)

11cm × **5.5cm**
Length Width

DISTRIBUTION



NATIVE TO INDONESIA

ELEVATIONAL RANGE (M)

500–1700m

TREE HEIGHT

LARGE (> 35M)



NATIVE TO

Region: Asia

Bangladesh, Cambodia, Laos, Malaysia, Myanmar, Singapore, Thailand, Vietnam

Indonesia: Java, Lesser Sunda Islands, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM

ROBUSTA

COFFEE IMPACT

Unknown

TREE MANAGEMENT

Unknown

REGENERATION

Unknown

CULTIVATION

Unknown

PREVALENCE

Unknown

TREE BENEFITS AND USES

FARMER USES



Lumber, Ornamental

Young leaves eaten.

FARM SERVICES

Unknown

BIODIVERSITY BENEFITS

Unknown

Last Updated: April 26, 2021

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TREE SPECIES (SCIENTIFIC NAME)

Litsea noronhae

INDONESIAN COMMON NAME

Medang klemah, Kihuru, Wuruh kembang

TREE FAMILY

LAURACEAE

AVERAGE LEAF SIZE (CM)

30-32cm × **7-9cm**
Length Width

DISTRIBUTION



NATIVE TO INDONESIA

ELEVATIONAL RANGE (M)

0-760m

TREE HEIGHT

SMALL (10-20M)



NATIVE TO

Region: Asia

Malaysia, Myanmar, Singapore

Indonesia: Borneo, Java, Lesser Sunda Islands

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM



COFFEE

COFFEE IMPACT



MAY COMPETE WITH COFFEE

TREE MANAGEMENT

Seeds dispersed by animals. Tree of secondary forest

REGENERATION



REGENERATES NATURALLY

CULTIVATION

PREVALENCE

Unknown

TREE BENEFITS AND USES

FARMER USES



Livestock Forage, Fuelwood, Lumber

Can be sold at market.

FARM SERVICES

Unknown

BIODIVERSITY BENEFITS

✓ **YES**

Fruits eaten by birds.

Last Updated: April 27, 2021

Image: <http://specimens.kew.org/herbarium/K000815293> The Herbarium Catalogue, Royal Botanic Gardens, Kew. Published on the Internet <http://www.kew.org/herbcat> [accessed on 10 12 2020].



TREE SPECIES (SCIENTIFIC NAME)

Macaranga tanarius

ENGLISH COMMON NAME

Hairy Mahang

INDONESIAN COMMON NAME

Calik angin, Tutup Ancur (Javanese), Mapu (Batak), Mara (Sundanese), Mahang, Tutup (C. Javanese)

TREE FAMILY

EUPHORBIACEAE

AVERAGE LEAF SIZE (CM)

20cm × **16.5cm**
Length Width

DISTRIBUTION



NATIVE TO INDONESIA

ELEVATIONAL RANGE (M)

0-1500M

TREE HEIGHT

SMALL (10-20M)



NATIVE TO

Region: Asia, Oceania

Myanmar, Papua New Guinea, Philippines, Thailand, Vietnam

Indonesia: Borneo, Java, Lesser Sunda Islands, Maluku Islands, New Guinea, Sulawesi, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM



ROBUSTA

COFFEE IMPACT



BENEFICIAL TO COFFEE

TREE MANAGEMENT

Wind pollinated. Fast growing pioneer species. Common in secondary forest.

REGENERATION



REGENERATES NATURALLY

CULTIVATION

PREVALENCE



COMMON IN COFFEE AGROFORESTRY

TREE BENEFITS AND USES

FARMER USES



Food, Fuelwood, Lumber, Medicinal, Product

The wood is used to make ladders for picking pepper, wooden shoes, in the construction of temporary houses, and in Indonesia, the leaves have been reported to dye matting black and the Kino tapped from the bark is used as a glue, particularly for fastening together parts of musical instruments. In Sumatra, fruits are added to palm juice when it is boiled down which improves the quality of the sugar produced. A decoction of the bark is applied to fight dysentery, a decoction of the root is used to fight fever and hemoptysis (coughing up blood), and powdered leaves are used in poultices for healing wounds.

FARM SERVICES



Coffee Shade, Reforestation

BIODIVERSITY BENEFITS



YES

Nectar is a food source for ants and insects. Fruits eaten by Javan Gibbon.

Last Updated: April 26, 2021

Image: <http://specimens.kew.org/herbarium/K001079694> The Herbarium Catalogue, Royal Botanic Gardens, Kew. Published on the Internet <http://www.kew.org/herbcat> [accessed on 10 12 2020].



TREE SPECIES (SCIENTIFIC NAME)

Macaranga triloba

INDONESIAN COMMON NAME

Mahang Damar

TREE FAMILY

EUPHORBIACEAE

AVERAGE LEAF SIZE (CM)

30-32cm × **20-22cm**
Length Width

DISTRIBUTION



NATIVE TO INDONESIA

ELEVATIONAL RANGE (M)

0-1400m

TREE HEIGHT

SMALL (10-20M)



NATIVE TO

Region: Asia

Cambodia, Malaysia, Philippines, Singapore, Thailand

Indonesia: Borneo, Java, Sulawesi, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM



ROBUSTA

COFFEE IMPACT

Unknown

TREE MANAGEMENT

Seeds dispersed by animals. Pioneer species that colonizes recently cleared or burnt areas of the forest.

REGENERATION



REGENERATES NATURALLY

CULTIVATION

PREVALENCE

Unknown

TREE BENEFITS AND USES

FARMER USES

Unknown

FARM SERVICES

Unknown

BIODIVERSITY BENEFITS

✓ **YES**

Mutualistic relationship with predatory ants of the *Crematogaster* genus

Last Updated: April 27, 2021

Image: <http://specimens.kew.org/herbarium/K001044877> The Herbarium Catalogue, Royal Botanic Gardens, Kew. Published on the Internet <http://www.kew.org/herbcat> [accessed on 10 12 2020].



TREE SPECIES (SCIENTIFIC NAME)

Maesopsis eminii

ENGLISH COMMON NAME

Umbrella Tree

INDONESIAN COMMON NAME

Kayu afrika, Trembelu (Javanese)

TREE FAMILY

RHAMNACEAE

AVERAGE LEAF SIZE (CM)

10.5cm × 4.25cm

Length Width

ELEVATIONAL RANGE (M)

700–1500m

TREE HEIGHT

LARGE (> 35M)



DISTRIBUTION



EXOTIC IN INDONESIA

NATIVE TO

Region: Africa

EXOTIC IN

Indonesia: Borneo, Java, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM

ROBUSTA **ARABICA**

COFFEE IMPACT

MAY COMPETE WITH COFFEE

REGENERATION

Unknown

CULTIVATION

PLANTED

TREE MANAGEMENT

Propagated by seed from fresh ripe fruit after the pericarp has been mechanically removed and the seed has been dried for several days. Germination generally takes 2-6 weeks but may require 100-200 days. Polybag nurseries are preferred to raised beds due to strong taproots. Seedlings ready to plant after 2-24 months. Thinning is required after year 5 to allow proper development of crown to stem ratio

PREVALENCE

COMMON IN COFFEE AGROFORESTRY

TREE BENEFITS AND USES

FARMER USES



Livestock Forage, Fuelwood, Lumber, Ornamental

Used for construction and furniture. Planted ornamentally along roads. Can be sold in regional and national markets.

FARM SERVICES

Unknown

BIODIVERSITY BENEFITS

Unknown

Last Updated: April 28, 2021

Image: Adi Nugroho



TREE SPECIES (SCIENTIFIC NAME)

Magnolia champaca

ENGLISH COMMON NAME

Champak

INDONESIAN COMMON NAME

Cempaka, Semulun

TREE FAMILY

MAGNOLIACEAE

AVERAGE LEAF SIZE (CM)

10cm × **5cm**
Length Width

DISTRIBUTION



NATIVE TO INDONESIA

ELEVATIONAL RANGE (M)

0-2100m

TREE HEIGHT

SMALL (10-20M)



NATIVE TO

Region: Asia

Cambodia, Laos, Malaysia, Myanmar, Singapore, Thailand, Vietnam

Indonesia: Borneo, Java, Lesser Sunda Islands, Sumatra

EXOTIC IN

Indonesia: Sulawesi

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM



ROBUSTA



ARABICA

COFFEE IMPACT



MAY COMPETE WITH COFFEE

TREE MANAGEMENT

Fast growing

REGENERATION



REQUIRES PROPAGATION

CULTIVATION

PREVALENCE

Unknown

TREE BENEFITS AND USES

FARMER USES



Livestock Forage, Fuelwood, Lumber

The pruning residue is used as fuelwood.

FARM SERVICES



Coffee Shade, Nitrogen Fixation

BIODIVERSITY BENEFITS

✓ **YES**

Last Updated: February 4, 2021

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TREE SPECIES (SCIENTIFIC NAME)

Magnolia tsiampacca

ENGLISH COMMON NAME

Wau beech

INDONESIAN COMMON NAME

Cempaka hutan halus, Aran, Arau, Arau sejam, Maharu, Medang, Miharo, Minag, Miwi, Sempaka, Talak Uma (Borneo)

TREE FAMILY

MAGNOLIACEAE

AVERAGE LEAF SIZE (CM)

8-31cm × **3-12cm**
Length Width

DISTRIBUTION



NATIVE TO INDONESIA

ELEVATIONAL RANGE (M)

0-1000M

TREE HEIGHT

LARGE (> 35M)



NATIVE TO

Region: Asia

Papua New Guinea

Indonesia: Borneo, Maluku Islands, New Guinea, Sulawesi, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM

COFFEE

COFFEE IMPACT

Unknown

TREE MANAGEMENT

Unknown

REGENERATION

Unknown

CULTIVATION

Unknown

PREVALENCE

COMMON IN COFFEE AGROFORESTRY

TREE BENEFITS AND USES

FARMER USES



Lumber, Product

Wood used for house construction, dug out canoes, furniture, boats and plywood.

FARM SERVICES

Unknown

BIODIVERSITY BENEFITS

YES

Constituted more than 80 percent of the diet of some macaque groups

Last Updated: April 27, 2021

TREE SPECIES (SCIENTIFIC NAME)

Magnolia vrieseana

INDONESIAN COMMON NAME

Cempaka hutan kasar, Uru

TREE FAMILY

MAGNOLIACEAE

AVERAGE LEAF SIZE (CM)

21.5cm × **10cm**
Length Width

DISTRIBUTION



NATIVE TO INDONESIA

ELEVATIONAL RANGE (M)

0-1000M

TREE HEIGHT

LARGE (> 35M)



NATIVE TO

Region: Asia

Indonesia: Maluku Islands, Sulawesi

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM



COFFEE

COFFEE IMPACT

Unknown

TREE MANAGEMENT

Unknown

REGENERATION

Unknown

CULTIVATION

Unknown

PREVALENCE



COMMON IN COFFEE AGROFORESTRY

TREE BENEFITS AND USES

FARMER USES



Lumber, Product

The wood is very durable and used for house construction and to make dug out canoes.

FARM SERVICES

Unknown

BIODIVERSITY BENEFITS

✓ **YES**

Macaques eat fruit

Last Updated: February 4, 2021



TREE SPECIES (SCIENTIFIC NAME)

Mangifera caesia

ENGLISH COMMON NAME

Jack, White Mango

INDONESIAN COMMON NAME

Binjai, Binglu (Sundanese), Wani (Balinese)

TREE FAMILY

ANACARDIACEAE

AVERAGE LEAF SIZE (CM)

18.5cm × 6.5cm

Length Width

ELEVATIONAL RANGE (M)

0–400m

TREE HEIGHT

MEDIUM (20–35M)



DISTRIBUTION



NATIVE TO INDONESIA

NATIVE TO

Region: Asia

Malaysia, Singapore, Thailand

Indonesia: Sumatra

EXOTIC IN

SE Asia: Philippines

Indonesia: Borneo, Java, Lesser Sunda Islands, Maluku Islands

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM



COFFEE

COFFEE IMPACT

Unknown

REGENERATION



REGENERATES NATURALLY

CULTIVATION



PLANTED

TREE MANAGEMENT

Seeds dispersed by animals. Spacing 12-16 m. Requires a rainfall which is evenly distributed through the year. Withstands flooding well and commonly cultivated on periodically flooded riverbanks in East Kalimantan. Rare in forests and found more frequently in periodically flooded areas and marshes.

PREVALENCE

Unknown

TREE BENEFITS AND USES

FARMER USES



Food, Product

Young leaves are consumed either raw, boiled, and commonly in lalab (a dish of fresh leafy vegetables), and the fruit is used to prepare a sambal (chili sauce/paste) which is eaten with fish, eaten fresh when ripe, or used to make homemade juice. The flesh of ripe fruit can also be pickled and preserved with salt in jars to make sambal when there is no fresh fruit available, and unripe fruit can be used to make rujak (a dish of sliced green fruit covered with a spicy sauce) and occasionally a dish made from fresh, grated seeds, with fermented soy beans and spices. The tree also produces latex.

FARM SERVICES

Unknown

BIODIVERSITY BENEFITS

Unknown

Last Updated: February 17, 2021

Image: <http://specimens.kew.org/herbarium/K000695186> The Herbarium Catalogue, Royal Botanic Gardens, Kew. Published on the Internet <http://www.kew.org/herbcat> [accessed on 10 12 2020].



TREE SPECIES (SCIENTIFIC NAME)

Mangifera foetida

ENGLISH COMMON NAME

Horse Mango

INDONESIAN COMMON NAME

Bacang, Limus (Sundanese), Asem Hambawang (Banjar, South Kalimantan), Pakel (Javanese)

TREE FAMILY

ANACARDIACEAE

AVERAGE LEAF SIZE (CM)

21cm × **12.5cm**
Length Width

DISTRIBUTION



NATIVE TO INDONESIA

ELEVATIONAL RANGE (M)

0-1000M

TREE HEIGHT

LARGE (> 35M)



NATIVE TO

Region: Asia

Cambodia, Malaysia, Myanmar, Singapore, Thailand, Vietnam

Indonesia: Borneo, Java, Sulawesi, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM

ROBUSTA **ARABICA**

COFFEE IMPACT

Unknown

TREE MANAGEMENT

Seeds can be planted or naturally dispersed by animals. Long lived tree. Occurs mainly in primary lowland forest in the wet tropics. Adapted to areas with abundant rainfall, evenly distributed over the year.

REGENERATION

REGENERATES NATURALLY

CULTIVATION

PLANTED

PREVALENCE

COMMON IN COFFEE AGROFORESTRY

TREE BENEFITS AND USES

FARMER USES



Food, Lumber, Medicinal, Product

Young leaves are consumed either raw or boiled and the fruit is also consumed and is highly marketable. The leaves are antipyretic and the seeds are used against trichophytosis, scabies, and eczema. The tree produces latex and while its wood is not durable, it is suitable for light indoor construction.

FARM SERVICES

Unknown

BIODIVERSITY BENEFITS

YES

Macaques eat fruit

Last Updated: February 17, 2021

Image: <http://specimens.kew.org/herbarium/K000695192> The Herbarium Catalogue, Royal Botanic Gardens, Kew. Published on the Internet <http://www.kew.org/herbcat> [accessed on 10 12 2020].



TREE SPECIES (SCIENTIFIC NAME)

Mangifera indica

ENGLISH COMMON NAME

Mango

INDONESIAN COMMON NAME

Mangga, Pelem (Javanese), Buah (Sundanese)

TREE FAMILY

ANACARDIACEAE

AVERAGE LEAF SIZE (CM)

24cm × **6cm**
Length Width

ELEVATIONAL RANGE (M)

0-1200m

TREE HEIGHT

LARGE (> 35M)



DISTRIBUTION

EXOTIC IN INDONESIA

NATIVE TO

Region: Asia
Myanmar, Thailand

EXOTIC IN

SE Asia: Cambodia, Laos, Malaysia, Philippines, Singapore, Vietnam
Indonesia: Borneo, Java, Lesser Sunda Islands, Sulawesi, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM

ROBUSTA **ARABICA**

COFFEE IMPACT

BENEFICIAL TO COFFEE

REGENERATION

REQUIRES PROPAGATION

CULTIVATION

PLANTED

TREE MANAGEMENT

Propagated by seed, budding and grafting. Cuttings can produce roots as well. Withstands dry periods and poor soils. During the first years after planting, irrigation promotes flushing and suppresses flowering, so tree size increases quickly and also widens the scope for intercropping with other crops. Stopping irrigation leads to flowering. Long lived tree.

PREVALENCE

COMMON IN COFFEE AGROFORESTRY

TREE BENEFITS AND USES

FARMER USES



Food, Fuelwood, Lumber, Medicinal

The tree produces tannin and its fruit is consumed, made into a beverage, and can be sold at local markets. Dried flowers or bark and the extracts of the kernels are used as astringents, and extracts of unripe fruit, bark, stems, and leaves are used as antibiotics. The wood is fairly strong, but must be treated with preservatives when used in construction and outdoor applications. It also makes an excellent charcoal, is used for burning due to its high calorific value and less toxic smoke, and is used to culture mushrooms.

FARM SERVICES



Coffee Shade

BIODIVERSITY BENEFITS

Unknown

Last Updated: April 26, 2021

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TREE SPECIES (SCIENTIFIC NAME)

Mangifera odorata

ENGLISH COMMON NAME

Saipan Mango

INDONESIAN COMMON NAME

Kweni, Bembem, Kaweni (Sundanese, West Java)

TREE FAMILY

ANACARDIACEAE

AVERAGE LEAF SIZE (CM)

26cm × **8.5cm**
Length Width

DISTRIBUTION

EXOTIC IN INDONESIA

ELEVATIONAL RANGE (M)

0-1000m

TREE HEIGHT

MEDIUM (20-35M)



NATIVE TO

Region: Asia
Laos, Thailand, Vietnam

EXOTIC IN

SE Asia: Malaysia, Singapore
Indonesia: Borneo, Java, Lesser Sunda Islands, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM

ROBUSTA **ARABICA**

COFFEE IMPACT

Unknown

TREE MANAGEMENT

Seeds planted or dispersed by animals. Many crops grown under shade of this species. Long lived tree.

REGENERATION

REGENERATES NATURALLY

CULTIVATION

PLANTED

PREVALENCE

COMMON IN COFFEE AGROFORESTRY

TREE BENEFITS AND USES

FARMER USES



Food, Fuelwood, Lumber, Medicinal, Product

The tree produces latex and its fruit is consumed and can also be sold commercially. The wood is preferred for its high calorific value and less toxic smoke. The bark is recommended for external application in treatment of psychogenic non-epileptic seizures.

FARM SERVICES

Unknown

BIODIVERSITY BENEFITS

Unknown

Last Updated: February 17, 2021

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TREE SPECIES (SCIENTIFIC NAME)

Mangifera pajang

INDONESIAN COMMON NAME

Asam Payang, Bambang (Borneo)

TREE FAMILY

ANACARDIACEAE

AVERAGE LEAF SIZE (CM)

31cm × **11cm**
Length Width

DISTRIBUTION



NATIVE TO INDONESIA

ELEVATIONAL RANGE (M)

0-1000m

TREE HEIGHT

MEDIUM (20-35M)



NATIVE TO

Region: Asia

Indonesia: Borneo

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM



COFFEE

COFFEE IMPACT

Unknown

TREE MANAGEMENT

Propagated by seed. Seeds dispersed by animals. Pollinated by insects

REGENERATION



REGENERATES NATURALLY

CULTIVATION



PLANTED

PREVALENCE

Unknown

TREE BENEFITS AND USES

FARMER USES



Food, Product

The raw fruit is consumed and the tree also produces latex.

FARM SERVICES

Unknown

BIODIVERSITY BENEFITS

✓ **YES**

Classified vulnerable by IUCN

Last Updated: February 17, 2021

Image: <http://specimens.kew.org/herbarium/K000695185> The Herbarium Catalogue, Royal Botanic Gardens, Kew. Published on the Internet <http://www.kew.org/herbcat> [accessed on 10 12 2020].



TREE SPECIES (SCIENTIFIC NAME)

Melia azedarach

ENGLISH COMMON NAME

White Cedar

INDONESIAN COMMON NAME

Mindi, Marambung (Sumatra)

TREE FAMILY

MELIACEAE

AVERAGE LEAF SIZE (CM)

15-80cm × **2-10cm**
Length Width

DISTRIBUTION



NATIVE TO INDONESIA

ELEVATIONAL RANGE (M)

0-1200M

TREE HEIGHT

LARGE (> 35M)



NATIVE TO

Region: Asia, Oceania

Cambodia, Laos, Papua New Guinea, Philippines, Thailand, Vietnam

Indonesia: Java, Lesser Sunda Islands, New Guinea, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM



ROBUSTA

COFFEE IMPACT

Unknown

TREE MANAGEMENT

Propagated usually by seed but also through stem cuttings, root suckers and air layering. Seed can be eased out and soaked in water for 1-2 days, depulped, and dried in the shade. Seedlings may be thinned to 15 cm x 15 cm when 2 months old and transplanted when 7-10 cm tall. Tree resprouts after cutting and regrows after pollarding making it suitable for pole production. During the first 2 years after planting intermittent weeding is necessary. When grown for timber stems are pruned to a height of ~6 m to obtain a branch-free bole

REGENERATION



REQUIRES PROPAGATION

CULTIVATION



PLANTED

PREVALENCE

Unknown

TREE BENEFITS AND USES

FARMER USES



Food, Fuelwood, Lumber, Medicinal, Ornamental, Product

The tree produces resin, aqueous and alcoholic extracts of the leaves and seed reportedly control many insect, mite, and nematode pests (but contain toxic components so care is needed in their use), its various parts have antiparasitic and antimalarial properties and are used as laxatives, to induce vomiting, to stimulate menstrual discharge, and to treat skin diseases. It produces oil and sugar, and its wood, which can be sold in regional and national markets, is used to make agricultural implements, carts, tool handles, furniture, and is valued in construction due to its termite resistance.

FARM SERVICES



Nitrogen Fixation

BIODIVERSITY BENEFITS

Unknown

Last Updated: April 27, 2021

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TREE SPECIES (SCIENTIFIC NAME)

Morinda citrifolia

ENGLISH COMMON NAME

Noni

INDONESIAN COMMON NAME

Mengkudu, Bengkudu (Minahasa, Gorontalo), Cangkudu (Sundanese). Mengkudu besar, Mengkudu jantan (Malaysia)

TREE FAMILY

RUBIACEAE

AVERAGE LEAF SIZE (CM)

30cm × **11cm**
Length Width

DISTRIBUTION

NATIVE TO INDONESIA

ELEVATIONAL RANGE (M)

0-1500M

TREE HEIGHT

SHRUB (1-10M)



NATIVE TO

Region: Asia, Oceania

Cambodia, Malaysia, Myanmar, Papua New Guinea, Philippines, Singapore, Thailand, Vietnam

Indonesia: Borneo, Java, Lesser Sunda Islands, Maluku Islands, New Guinea, Sulawesi, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM

ROBUSTA **ARABICA**

COFFEE IMPACT

BENEFICIAL TO COFFEE

TREE MANAGEMENT

Propagated by seed and sown in nursery beds. After germination, seedlings transplanted at 1.2 m x 1.2 m in well-tilled soil (including both volcanic and poor, ferralitic soil). Weed 1 month after transplanting and again at 6 months. No maintenance is needed after one year of establishment and intercropping is possible

REGENERATION

REGENERATES NATURALLY

CULTIVATION

PLANTED

PREVALENCE

Unknown

TREE BENEFITS AND USES

FARMER USES



Medicinal, Product

The root, leaves, and fruits are used to treat intestinal, gynecological, and urinary complaints. The bark is used as a tonic and as an antiseptic on skin lesions, ulcers and wounds. The leaves are used to treat dysentery, diarrhea, colic, nausea and convulsions and as a febrifuge (reduces fever), tonic and antiseptic. The fruits are used as a diuretic, laxative, emollient, emmenagogue (stimulate blood flow in pelvic area and uterus), for asthma and other respiratory problems, as a treatment for arthritic and comparable inflammations, and in cases of leucorrhoea, sapaemia, and for maladies of inner organs. Roots, leaves, and fruits may have anthelmintic (antiparasitic) properties. In traditional medicine, the parts used are administered raw or as juices, infusions, or as ointments and poultices. Root bark used as dye for batik.

FARM SERVICES



Coffee Shade

BIODIVERSITY BENEFITS

Unknown

Last Updated: February 4, 2021

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TREE SPECIES (SCIENTIFIC NAME)

Moringa oleifera

ENGLISH COMMON NAME

Moringa Tree, Ben-oil Tree, Horseradish Tree, Cabbage Tree

INDONESIAN COMMON NAME

Kelor

TREE FAMILY

MORINGACEAE

AVERAGE LEAF SIZE (CM)

90cm × **1-2cm**
Length Width

DISTRIBUTION

EXOTIC IN INDONESIA

ELEVATIONAL RANGE (M)

0-1000M

TREE HEIGHT

SHRUB (1-10M)



NATIVE TO

Region: Asia

EXOTIC IN

SE Asia: Java, Lesser Sunda Islands, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM



COFFEE

COFFEE IMPACT

Unknown

TREE MANAGEMENT

Diperbanyak dengan stek, benih dan trubusan. Benih harus dikumpulkan dari polong yang berkembang dengan baik. Merespon dengan baik terhadap mulsa, air dan pupuk. Dapat tumbuh pada bermacam tipe tanah namun lebih menyukai tanah liat atau lempung liat dengan drainase yang baik.

REGENERATION



REGENERATES NATURALLY

CULTIVATION



PLANTED

PREVALENCE



COMMON IN COFFEE AGROFORESTRY

TREE BENEFITS AND USES

FARMER USES



Food, Livestock Forage, Fuelwood, Lumber, Medicinal, Ornamental, Product

Daun dan buah polong muda dapat dimakan sebagai sayur. Akar dapat digunakan sebagai alternatif. Biji digunakan untuk membuat minyak untuk memasak dan digunakan sebagai bumbu dapur. Bunga bisa dimakan dan bisa dibuat teh. Daun digunakan sebagai pakan ternak dan ranting digunakan sebagai pakan sapi. Serat dari kulit kayu digunakan untuk membuat tali dan tikar serta kulit kayu digunakan untuk penyamakan kulit dan menghasilkan pewarna biru. Kayu digunakan untuk konstruksi ringan. Getah digunakan dalam pencetakan, bumbu, dan sebagai obat untuk mengatasi sakit perut dan kandungan kemih. Biji digunakan sebagai obat untuk mengobati infeksi kulit. Bunga digunakan untuk mengobati masuk angin. Getah juga dapat digunakan sebagai diuretik, astringen, dan untuk mengobati asma.

FARM SERVICES



Coffee Shade, Windbreak, Soil Improvement, Erosion Control

Daun hujau dapat dimanfaatkan sebagai mulsa. Dapat digunakan sebagai pagar hidup.

BIODIVERSITY BENEFITS



YES

Penyerbukan dilakukan oleh lebah kayu (*Xylocopa latipes* dan *X. pubescens*) serta burung pengisap madu (*Nectarinia zeylanica* dan *N. asiatica*).

Last Updated: May 18, 2021

Image: Peter Gasson RBG Kew



TREE SPECIES (SCIENTIFIC NAME)

Musa sp.

ENGLISH COMMON NAME

Banana

INDONESIAN COMMON NAME

Pisang

TREE FAMILY

MUSACEAE

AVERAGE LEAF SIZE (CM)

30-32cm × **10-12cm**
Length Width

DISTRIBUTION



NATIVE TO INDONESIA

ELEVATIONAL RANGE (M)

Unknown

TREE HEIGHT

SHRUB (1-10M)



NATIVE TO

Region: Asia, Oceania

Cambodia, Laos, Malaysia, Myanmar, Papua New Guinea, Philippines, Singapore, Thailand, Vietnam

Indonesia: Borneo, Java, Lesser Sunda Islands, Maluku Islands, New Guinea, Sulawesi, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM

ROBUSTA **ARABICA**

COFFEE IMPACT

BENEFICIAL TO COFFEE

REGENERATION

REGENERATES NATURALLY

CULTIVATION

PLANTED

TREE MANAGEMENT

Propagated primarily by sucker regeneration, but some varieties can be grown commercially by seed. Divide suckers in late spring. Sow seeds in individual pots in the spring in a warm, lightly shaded greenhouse at about 20° C. Grow the seedlings in a rich soil, giving occasional liquid feeds. Keep in a greenhouse for at least 3 years before planting outside.

PREVALENCE

COMMON IN COFFEE AGROFORESTRY

TREE BENEFITS AND USES

FARMER USES



Food, Medicinal, Product, Ceremonial

The fruits can be sold at market and used as a source of income when coffee sales are insufficient and are eaten as a dessert, steamed for snacks, or used as a supplementary staple, the flowers are eaten, and the leaves are used as wrapping material. The juice of the stem is used to treat leprosy and hysteria and the young leaves are applied as dressings to burns and blisters. In the Hindu religion, the plants are a sign of fertility and prosperity, with the many suckers produced around the parent plant representing the fertility of the married couple. It is used as shade.

FARM SERVICES



Coffee Shade

BIODIVERSITY BENEFITS

Unknown

Last Updated: April 28, 2021

Image: Adi Nugroho



TREE SPECIES (SCIENTIFIC NAME)

Myristica fragrans

ENGLISH COMMON NAME

Nutmeg

INDONESIAN COMMON NAME

Pala

TREE FAMILY

MYRISTICACEAE

AVERAGE LEAF SIZE (CM)

10cm × **4.5cm**
Length Width

DISTRIBUTION



NATIVE TO INDONESIA

ELEVATIONAL RANGE (M)

0-700m

TREE HEIGHT

SMALL (10-20M)



NATIVE TO

Region: Asia

Indonesia: Maluku Islands

EXOTIC IN

SE Asia: Laos, Philippines, Thailand, Vietnam

Indonesia: Java, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM



ROBUSTA

COFFEE IMPACT

Unknown

REGENERATION

Unknown

CULTIVATION



PLANTED

TREE MANAGEMENT

Propagated by seeds collected from mature trees. Keep in nurseries for one year. Plant young trees under 50% shade. At 6-7 years they can grow in full sun. Space at 6 m x 6 m and thin as needed. Plant 2-3 seedlings on the same spot so male trees can be cut out and excess female trees may be transplanted. To optimize production only 10% of the trees should be male trees and should be distributed equally to support pollination. First flowering occurs about 6 years after planting and reveals sex of tree. Subject to blowdowns in areas with strong winds. Branches should not touch as it impedes flowering. Regular pruning of lower branches is required to facilitate collection of dropped seeds. Prefers volcanic soils and soil with high contents of organic matter at pH 6.5-7.5. After de-husking, the red feathery aril should be removed, flattened out, and dried in the sun for 10-15 days and the nuts dried separately for 4-8 weeks until the kernels rattle within the shells.

PREVALENCE



COMMON IN COFFEE AGROFORESTRY

TREE BENEFITS AND USES

FARMER USES



Food, Medicinal

The nuts are collected and dried and the fruit is eaten. It is said to have stimulant, carminative (helps expel excess gas), astringent, and aphrodisiac properties. Can be sold at market.

FARM SERVICES

Unknown

BIODIVERSITY BENEFITS

Unknown

Last Updated: February 4, 2021

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TREE SPECIES (SCIENTIFIC NAME)

Neolamarckia cadamba

ENGLISH COMMON NAME

Common burflower

INDONESIAN COMMON NAME

Jabon

TREE FAMILY

RUBIACEAE

AVERAGE LEAF SIZE (CM)

32.5cm × **16.5cm**
Length Width

DISTRIBUTION



NATIVE TO INDONESIA

ELEVATIONAL RANGE (M)

300–800m

TREE HEIGHT

LARGE (> 35M)



NATIVE TO

Region: Asia

Cambodia, Laos, Malaysia, Myanmar, Papua New Guinea, Singapore, Thailand, Vietnam

Indonesia: Borneo, Java, Lesser Sunda Islands, New Guinea, Sulawesi, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM

ROBUSTA **ARABICA**

COFFEE IMPACT

BENEFICIAL TO COFFEE

REGENERATION

REGENERATES NATURALLY

CULTIVATION

PLANTED

TREE MANAGEMENT

Propagated by coppice shoots. Birds and other animals disperse seeds. 2 month seedlings can be transplanted in nursery beds or into polythene bags and retained before planting at the start of the monsoon rains. To ensure successful establishment seedlings should be planted with their balls of earth. Starts flowering around age 4. Saplings require protection from the sun and need regular weeding. Mature trees need prefer full sun. Sensitive to frost, drought, excessive moisture and grazing. Growth is usually fast for the first 6-8 years, and at 10-15 years old the trees can be felled. Early successional species that grows best on deep, moist, alluvial soils. Can withstand periodic flooding.

PREVALENCE

COMMON IN COFFEE AGROFORESTRY

TREE BENEFITS AND USES

FARMER USES



Fuelwood, Lumber, Medicinal, Product

Wood used as raw materials for building houses or fences, plywood, light construction, pulp and paper, boxes and crates, dug-out canoes, and furniture components. The dried bark is used to relieve fever and as a tonic. An extract of the leaves serves as a mouth gargle. Can be sold at market and provides long-term income sources.

FARM SERVICES



Coffee Shade, Soil Improvement

Soil improvement: sheds large amounts of leaf and non-leaf litter

BIODIVERSITY BENEFITS

Unknown

Last Updated: February 4, 2021

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TREE SPECIES (SCIENTIFIC NAME)

Nephelium lappaceum

ENGLISH COMMON NAME

Rambutan

INDONESIAN COMMON NAME

Rambutan

TREE FAMILY

SAPINDACEAE

AVERAGE LEAF SIZE (CM)

6-18cm × **4-7.5cm**
Length Width

DISTRIBUTION

NATIVE TO INDONESIA

ELEVATIONAL RANGE (M)

0-600m

TREE HEIGHT

SMALL (10-20M)



NATIVE TO

Region: Asia
Malaysia, Singapore, Thailand
Indonesia: Borneo, Sumatra

EXOTIC IN

SE Asia: Laos, Myanmar, Philippines, Vietnam
Indonesia: Java, Lesser Sunda Islands, Sulawesi

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM

ROBUSTA **ARABICA**

COFFEE IMPACT

BENEFICIAL TO COFFEE

REGENERATION

REGENERATES NATURALLY

CULTIVATION

PLANTED

TREE MANAGEMENT

Seedlings available from fruit/commodity nurseries. Seed propagation not recommended. Produces long, upright growth so early pruning/training is recommended to form an open center. After harvest, fruited twigs should be pruned back to stimulate new growth (up to 4 new side shoots), which allows 22% of the shoots to produce fruit in the following season. Remove dead branches and water suckers regularly. Mulch during establishment and dry periods. Do not mulch prior to flowering. Fertilizer recommended for young trees (200 g nitrogen, 25 g of phosphate, and 100 g potassium per tree per year). For the first 4 years, apply fertilizer every 3 months. For fruiting trees, apply fertilizer (200 g N, 25 g P, and 130 g K) per tree per year of age. A quarter of the yearly fertilizer should be applied 4 weeks after fruit set, half applied immediately after harvest, and the remaining quarter 9 weeks post-harvest. Additionally, 0.4 kg of dolomite per tree per year of age should be applied during slow growing months. Glyphosate herbicide should never be used near the drip line at any stage as it could cause a severe yellowing and abscission of the lower leaves. Fertilizer and dolomite use should constant after 10 years.

PREVALENCE

COMMON IN COFFEE AGROFORESTRY

TREE BENEFITS AND USES

FARMER USES



Food, Fuelwood, Lumber, Medicinal, Ornamental, Product

Fruit, oil, stimulant are used and consumed. Wood used in civil construction. Roots used to treat fever, the bark as an astringent for disease of the tongue, and the leaves as compresses for headache. Young shoots are used as a green dye for silk which has already been dyed yellow with turmeric (*Curcuma longa*). Used ornamentally for its fruits. Fruits can be sold at local markets and 40-80% of yearly production is generally marketed.

FARM SERVICES



Coffee Shade

BIODIVERSITY BENEFITS

Unknown

Last Updated: April 27, 2021

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TREE SPECIES (SCIENTIFIC NAME)

Octomeles sumatrana

INDONESIAN COMMON NAME

Binuang

TREE FAMILY

TETRAMELACEAE

AVERAGE LEAF SIZE (CM)

21cm × **14.5cm**
Length Width

DISTRIBUTION



NATIVE TO INDONESIA

ELEVATIONAL RANGE (M)

0-1000M

TREE HEIGHT

LARGE (> 35M)



NATIVE TO

Region: Asia

Papua New Guinea, Philippines

Indonesia: Borneo, Maluku Islands, New Guinea, Sulawesi, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM



ROBUSTA

COFFEE IMPACT

Unknown

TREE MANAGEMENT

Propagated by seed. Seed is susceptible to damage by fungi during transportation and germination rate is variable but generally low (about 40%). Spacing of 2.4 x 2.4 m. Fruit production very abundant every 3-4 years

REGENERATION

Unknown

CULTIVATION



PLANTED

PREVALENCE



COMMON IN COFFEE AGROFORESTRY

TREE BENEFITS AND USES

FARMER USES



Food, Lumber, Medicinal, Product

Used to make furniture and large dugout canes. Young leaves are eaten as a vegetable. Leaves are made into a juice and used to treat stomachache.

FARM SERVICES

Unknown

BIODIVERSITY BENEFITS

✓ **YES**

Wild bees often nest in the branches

Last Updated: March 8, 2021

Image: <http://specimens.kew.org/herbarium/K000761137> The Herbarium Catalogue, Royal Botanic Gardens, Kew. Published on the Internet <http://www.kew.org/herbcat> [accessed on 10 12 2020].



TREE SPECIES (SCIENTIFIC NAME)

Palaquium obovatum

ENGLISH COMMON NAME

Gutta-percha Tree

INDONESIAN COMMON NAME

Nyatoh

TREE FAMILY

SAPOTACEAE

AVERAGE LEAF SIZE (CM)

20-25cm × **5-10cm**
Length Width

DISTRIBUTION



NATIVE TO INDONESIA

ELEVATIONAL RANGE (M)

0-1300M

TREE HEIGHT

LARGE (> 35M)



NATIVE TO

Region: Asia

Cambodia, Malaysia, Myanmar, Philippines, Singapore, Thailand, Vietnam

Indonesia: Borneo, Lesser Sunda Islands, Maluku Islands, Sulawesi, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM

ROBUSTA **ARABICA**

COFFEE IMPACT

Unknown

TREE MANAGEMENT

Unknown

REGENERATION

Unknown

CULTIVATION

Unknown

PREVALENCE

Unknown

TREE BENEFITS AND USES

FARMER USES



Lumber, Ceremonial

Used to build traditional houses. Used in traditional ceremonies. Wood used to make furniture, fixture, floors and internal joinery, and because it is also long-lasting in water, it is used for submerged structures and boats.

FARM SERVICES

Unknown

BIODIVERSITY BENEFITS

✓ **YES**

Provide resources for macaques, such as canopy connectivity and strata for resting and foraging

Last Updated: April 27, 2021

Image: <http://specimens.kew.org/herbarium/K000777701> The Herbarium Catalogue, Royal Botanic Gardens, Kew. Published on the Internet <http://www.kew.org/herbcat> [accessed on 10 12 2020].



TREE SPECIES (SCIENTIFIC NAME)

Pandanus amaryllifolius

ENGLISH COMMON NAME

Fragrant screw pine

INDONESIAN COMMON NAME

Pandan, Pandan rampe (Sundanese), Pondak (Moluccas)

TREE FAMILY

PANDANACEAE

AVERAGE LEAF SIZE (CM)

185cm × 8cm

Length Width

ELEVATIONAL RANGE (M)

Unknown

TREE HEIGHT

SHRUB (1–10M)



DISTRIBUTION



NATIVE TO INDONESIA

NATIVE TO

Region: Asia

Indonesia: Java, Maluku Islands, Sulawesi

EXOTIC IN

SE Asia: Cambodia, Malaysia, Papua New Guinea, Philippines, Singapore, Thailand, Vietnam

Indonesia: Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM

ROBUSTA **ARABICA**

COFFEE IMPACT

Unknown

REGENERATION

REGENERATES NATURALLY

CULTIVATION

PLANTED

TREE MANAGEMENT

Propagates by suckers or stem cuttings. Suckers removed from the leaf axils can be planted directly in the ground or rooted first in a sandy medium and stem cuttings should be inserted obliquely in the planting medium. Not usually grown in regularly spaced stands and tend to consist of a few plants mixed with other species

PREVALENCE

COMMON IN COFFEE AGROFORESTRY

TREE BENEFITS AND USES

FARMER USES



Food, Medicinal, Ornamental, Product, Ceremonial

The leaves are removed from the food before consumption but are widely used to flavor and add green color to rice and other food products through pressing out the leaf juice. Fried chicken wrapped in pandanis leaves is considered a delicacy, freshly chopped leaves are mixed with the petals of various flowers to make potpourris, the leaves can be woven into small baskets, and the tree is also used ornamentally. After soaking the leaves in coconut oil, the oil is used externally to treat rheumatic issues and infusions of the leaves are used internally and externally as a sedative against restlessness.

FARM SERVICES

Unknown

BIODIVERSITY BENEFITS

Unknown

Last Updated: February 17, 2021

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TREE SPECIES (SCIENTIFIC NAME)

Pandanus tectorius

ENGLISH COMMON NAME

Screwpine

INDONESIAN COMMON NAME

Pandan Tikar, Pandan Duri

TREE FAMILY

PANDANACEAE

AVERAGE LEAF SIZE (CM)

200cm × **13.5cm**
Length Width

ELEVATIONAL RANGE (M)

0-600m

TREE HEIGHT

SHRUB (1-10M)



DISTRIBUTION



NATIVE TO INDONESIA

NATIVE TO

Region: Asia, Oceania

Papua New Guinea, Philippines

Indonesia: Java, Lesser Sunda Islands, Maluku Islands, New Guinea, Sumatra

EXOTIC IN

SE Asia: Thailand

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM



ROBUSTA

COFFEE IMPACT

Unknown

REGENERATION



REGENERATES NATURALLY

CULTIVATION



PLANTED

TREE MANAGEMENT

Propagated by seed or large cuttings. Germination can be accelerated by soaking the keys in cool water for 5 days and change the water every day (viable Pandanus keys will float). If using cuttings, select plants with aerial or prop roots, and trim about 2/3 of the leaves off to reduce water loss. If using a mature branch with leaves and some small aerial roots, rooting it in a sand bed is recommended. Plants grown from cuttings fruit in 4 to 6 year. Pollinated by wind and small insects

PREVALENCE

Unknown

TREE BENEFITS AND USES

FARMER USES



Food, Medicinal, Product

Leaves are weaved to make mats, baskets, and handicraft. The fruit needs to be cooked to destroy a harmful substance but is consumed and the seed can be eaten raw or cooked. The aerial roots yield a decoction that is used as a beverage in the treatment of vaginal or urethral discharge.

FARM SERVICES



Windbreak, Erosion Control

BIODIVERSITY BENEFITS

Unknown

Last Updated: February 4, 2021

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TREE SPECIES (SCIENTIFIC NAME)

Pangium edule

INDONESIAN COMMON NAME

Keluwak , Kepayang, Picung (Sundanese), Pucung (Javanese)

TREE FAMILY

ACHARIACEAE

AVERAGE LEAF SIZE (CM)

35cm × **24cm**
Length Width

DISTRIBUTION

 **NATIVE TO INDONESIA**

ELEVATIONAL RANGE (M)

0-300m

TREE HEIGHT

LARGE (> 35M)



NATIVE TO

Region: Asia, Oceania

Malaysia, Papua New Guinea, Philippines, Singapore

Indonesia: Borneo, Java, Lesser Sunda Islands, Maluku Islands, New Guinea, Sulawesi, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM

 **ROBUSTA**

COFFEE IMPACT

Unknown

TREE MANAGEMENT

Propagated by seed with scarification then immersion in water for 24 hours prior to sowing. A seed bed consisting of sand facilitates transplanting. Germination takes about 1 month with seedlings transplanted in individual pots when 2-3 leaves have developed. Pot with equal amounts of compost and sand. Transplant seedlings at 4 months.

REGENERATION

 **REGENERATES NATURALLY**

CULTIVATION

 **PLANTED**

PREVALENCE

Unknown

TREE BENEFITS AND USES

FARMER USES



Food, Lumber, Product

Fruits are consumed, fresh leaves can be used to preserve meat or game for several days, the oil extracted from fresh or cooked kernels is used for cooking, as a preservative used in traditional weaving, and for illumination or soap making (but in general the oil is considered of poor quality for these applications). Fresh leaves, leaf sap, pounded leaves, or ground fresh seeds are externally applied as an antiseptic and disinfectant to cleanse ulcerations, infested wounds, to treat scurf, and can be used as an insecticide against head lice and ticks, and as an insect repellent in general. The sapwood and heartwood is yellow, hard but not very durable, and is used occasionally for local construction and suitable for making match sticks.

FARM SERVICES

Unknown

Maintains water regulation and quantity.

BIODIVERSITY BENEFITS

Unknown

Last Updated: April 26, 2021



TREE SPECIES (SCIENTIFIC NAME)

Paraserianthes lophantha

ENGLISH COMMON NAME

Crested wattle

INDONESIAN COMMON NAME

Kemlandingan gunung, Kayu waek (Flores), Mlandingan Gunung (Javanese), Ki haruman (Sundanese)

TREE FAMILY

FABACEAE

AVERAGE LEAF SIZE (CM)

0.8cm × **0.25cm**
Length Width

DISTRIBUTION



NATIVE TO INDONESIA

ELEVATIONAL RANGE (M)

0–300m

TREE HEIGHT

SHRUB (1–10M)



NATIVE TO

Region: Oceania

Indonesia: Java, Lesser Sunda Islands, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM



ARABICA

COFFEE IMPACT



BENEFICIAL TO COFFEE

TREE MANAGEMENT

Seeds germinate easily after fire or acid treatment

REGENERATION



REGENERATES NATURALLY

CULTIVATION



PLANTED

PREVALENCE

Unknown

TREE BENEFITS AND USES

FARMER USES



Food

In Java the seed may be used as a vegetable as a substitute for petai (Parkia speciosa) or as seasoning to replace jengkol (Archidendron jiringa).

FARM SERVICES



Coffee Shade, Soil Improvement, Nitrogen Fixation

BIODIVERSITY BENEFITS

Unknown

Last Updated: February 17, 2021

Image: <http://specimens.kew.org/herbarium/K000759572> The Herbarium Catalogue, Royal Botanic Gardens, Kew. Published on the Internet <http://www.kew.org/herbcat> [accessed on 10 12 2020].

TREE SPECIES (SCIENTIFIC NAME)

Parashorea lucida

ENGLISH COMMON NAME

White meranti

INDONESIAN COMMON NAME

Angkola , Gendala (Javanese), Hares (Moluccas)

TREE FAMILY

DIPTEROCARPACEAE

AVERAGE LEAF SIZE (CM)

10cm × **4.5cm**
Length Width

DISTRIBUTION



NATIVE TO INDONESIA

ELEVATIONAL RANGE (M)

0-700m

TREE HEIGHT

LARGE (> 35M)



NATIVE TO

Region: Asia

Indonesia: Borneo, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM



ROBUSTA

COFFEE IMPACT

Unknown

TREE MANAGEMENT

Propagated by seed

REGENERATION

Unknown

CULTIVATION



PLANTED

PREVALENCE



COMMON IN COFFEE AGROFORESTRY

TREE BENEFITS AND USES

FARMER USES



Fuelwood, Lumber

The wood is used for purposes such as light carpentry, interior paneling and flooring, furniture, boxes and crates, and veneer.

FARM SERVICES

Unknown

BIODIVERSITY BENEFITS

Unknown

Last Updated: February 17, 2021



TREE SPECIES (SCIENTIFIC NAME)

Parkia speciosa

ENGLISH COMMON NAME

Bitter bean

INDONESIAN COMMON NAME

Petai, Pete (Javanese)

TREE FAMILY

FABACEAE

AVERAGE LEAF SIZE (CM)

0.7cm × **0.2cm**
Length Width

ELEVATIONAL RANGE (M)

0-1400M

TREE HEIGHT

MEDIUM (20-35M)



DISTRIBUTION



NATIVE TO INDONESIA

NATIVE TO

Region: Asia

Malaysia, Philippines, Singapore, Thailand

Indonesia: Borneo, Java, Sulawesi, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM

ROBUSTA **ARABICA**

COFFEE IMPACT

BENEFICIAL TO COFFEE

REGENERATION

REGENERATES NATURALLY

CULTIVATION

PLANTED

TREE MANAGEMENT

Propagated by seedlings. Pollinated by bats and seed pods dispersed by birds. Able to withstand dry periods and poor soil, but ample space and light are necessary for optimal growth. Long lived tree.

PREVALENCE

COMMON IN COFFEE AGROFORESTRY

TREE BENEFITS AND USES

FARMER USES



Food, Fuelwood, Lumber, Medicinal, Product

Spice, vegetable, fruit, and seeds can be sold at local market and are also consumed with the seeds sometimes used as a vegetable as they have a garlic flavor, half-ripe pods pickled in salt, and young leaves and fresh parts of the flower stalks eaten raw. The seeds are known to reduce blood sugar levels and are used in treatment of kidney pain and inflammation, cancer, diabetes, liver pain, swelling, colic, cholera, used as an antiparasitic, and are applied externally to wounds and ulcers. The wood is used locally for temporary light construction, carpentry, matches, clogs, disposable chopsticks, and fishnet floats.

FARM SERVICES



Coffee Shade, Soil Improvement, Nitrogen Fixation

Soil improvement: high litter layer decomposition rate, reduces soil erosion

BIODIVERSITY BENEFITS

YES

Fruits and leaves feed Helmeted hornbill (*Rhinoplax vigil*) and the endangered Black-crested Sumatran langur (*Presbytis melalophus*). Black-banded squirrel and the slender squirrel are often seen stripping pieces of the outer bark to eat the inner bark or cambium.

Last Updated: April 28, 2021

Image: Dulanser siburian



TREE SPECIES (SCIENTIFIC NAME)

Peronema canescens

INDONESIAN COMMON NAME

Sungkai, Julu-julu hantu (borneo)

TREE FAMILY

LAMIACEAE

AVERAGE LEAF SIZE (CM)

30-40cm × **20-25cm**
Length Width

DISTRIBUTION



NATIVE TO INDONESIA

ELEVATIONAL RANGE (M)

600-900m

TREE HEIGHT

LARGE (> 35M)



NATIVE TO

Region: Asia

Malaysia, Singapore, Thailand

Indonesia: Borneo, Java, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM



ROBUSTA

COFFEE IMPACT

Unknown

TREE MANAGEMENT

Propagated by stem cuttings (cuttings 15-20 mm in diameter and 20-25 cm long are best) but can be propagated by seed. Purchased seeds germinate quickly in full light but collected seeds have low germination. Transplant after 4 months. Plant at 3 x 1 m or 3 x 2 m and 4 x 2 m. Pruning is necessary. Common tree of secondary forest, but does not occur in primary forest.

REGENERATION

Unknown

CULTIVATION



PLANTED

PREVALENCE

Unknown

TREE BENEFITS AND USES

FARMER USES



Lumber, Medicinal, Ornamental

The wood is highly valued for furniture making. The wood, bark, and leaves are used to treat stomach pains, wounds, and white skin blotches. The young leaf is believed to help treat chickenpox.

FARM SERVICES



Reforestation

BIODIVERSITY BENEFITS

Unknown

Last Updated: April 27, 2021

Image: <http://specimens.kew.org/herbarium/K000932116> The Herbarium Catalogue, Royal Botanic Gardens, Kew. Published on the Internet <http://www.kew.org/hercat> [accessed on 10 12 2020].



TREE SPECIES (SCIENTIFIC NAME)

Persea americana

ENGLISH COMMON NAME

Avocado

INDONESIAN COMMON NAME

Alpukat

TREE FAMILY

LAURACEAE

AVERAGE LEAF SIZE (CM)

8-30cm × **3.5-19cm**
Length Width

ELEVATIONAL RANGE (M)

0-2500M

TREE HEIGHT

SMALL (10-20M)



DISTRIBUTION



EXOTIC IN INDONESIA

NATIVE TO

Region: Americas

EXOTIC IN

SE Asia: Laos, Vietnam

Indonesia: Java, Lesser Sunda Islands, Sulawesi, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM

ROBUSTA **ARABICA**

COFFEE IMPACT

BENEFICIAL TO COFFEE

REGENERATION

REQUIRES PROPAGATION

CULTIVATION

PLANTED

PREVALENCE

COMMON IN COFFEE AGROFORESTRY

TREE MANAGEMENT

Propagated by budding, grafting, and seed. Can be pre-germinated in sand or sawdust then transferred to containers to be grafted and grown to a suitable size for planting. With intensive care can each grafting age within 2-3 months from sowing. Fruit for seed should be picked directly from the tree and should use well-drained pasteurized or sterilized potting media and water from a protected source or disinfected. Only extract seeds from mature trees free of sun-blotch viroid as it is seed-transmitted. Seed loses viability quickly and should be sown within 7 days. To prolong for several months dust seed with a copper fungicide and store in damp sawdust or peat in polythene bags at 4-6 C. Plant 2-3 seeds per site if sowing directly. Select strongest seedling for field grafting. Before planting 10 liters manure and 300 g of phosphorus should be incorporated to 50 cm depth at each planting area and lime or dolomite should be used to raise pH to 5.0-5.8 if necessary. Plant at 6-12 m on the square in planting pattern that allows for thinning to accommodate full-grown trees (i.e. 9 m x 6 m thinned to 12 m x 9 m). Close spacings improve yields for the first 6-8 years but thinning becomes necessary after this period. Long lived species

TREE BENEFITS AND USES

FARMER USES



Food, Livestock Forage, Fuelwood, Lumber, Medicinal

Fruit, vegetable, beverage, and oil used and consumed. It is used for shade and preferred as coffee plant shade. The flesh is used for medicine and the fruit can be sold locally and commercially.

FARM SERVICES



Coffee Shade

BIODIVERSITY BENEFITS

Unknown

Last Updated: April 28, 2021

Image: Dulanser Siburian



TREE SPECIES (SCIENTIFIC NAME)

Phyllanthus acidus

ENGLISH COMMON NAME

Star gooseberry

INDONESIAN COMMON NAME

Cermai bogor, Ceremai, Caramele (Southern Sulawesi)

TREE FAMILY

PHYLLANTHACEAE

AVERAGE LEAF SIZE (CM)

6.5cm × **3.25cm**
Length Width

DISTRIBUTION

EXOTIC IN INDONESIA

ELEVATIONAL RANGE (M)

0-1000m

TREE HEIGHT

SHRUB (1-10M)



NATIVE TO

Region: Americas

EXOTIC IN

SE Asia: Cambodia, Myanmar, Philippines, Thailand, Vietnam
Indonesia: Borneo, Java, Lesser Sunda Islands, Sulawesi

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM

ROBUSTA **ARABICA**

COFFEE IMPACT

Unknown

TREE MANAGEMENT

Fruits often explosively disperse their seeds. Plant at spacing of 8 m x 8 m

REGENERATION

REGENERATES NATURALLY

CULTIVATION

PLANTED

PREVALENCE

COMMON IN COFFEE AGROFORESTRY

TREE BENEFITS AND USES

FARMER USES



Food, Medicinal

Young leaves are cooked as a vegetable, the fruit flesh is added to many dishes in Indonesia for flavoring, and the fruits can also be sold at market. The latex can be used to induce vomiting, the bark is heated with coconut oil and spread on eruptions on feet and hands, an infusion of the root is taken to alleviate asthma and in the treatment of psoriasis of the feet, roots can be boiled (although weakly poisonous) and the vapor inhaled to relieve cough and headache, leaf decoctions are applied to hives, a decoction of the bark is used to treat bronchial inflammation, and the fruit is used as a laxative or taken as a liver tonic to enrich the blood.

FARM SERVICES

Unknown

BIODIVERSITY BENEFITS

Unknown

Last Updated: February 4, 2021

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TREE SPECIES (SCIENTIFIC NAME)

Pinus merkusii

ENGLISH COMMON NAME

Merkus Pine

INDONESIAN COMMON NAME

Pinus

TREE FAMILY

PINACEAE

AVERAGE LEAF SIZE (CM)

15-25cm × **0.25cm**
Length Width

DISTRIBUTION

 **UNKNOWN**

ELEVATIONAL RANGE (M)

0-2000M

TREE HEIGHT

LARGE (> 35M)



NATIVE TO

Region: Asia

Myanmar, Philippines, Thailand

Indonesia: Java, Sulawesi, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM

 **ROBUSTA**  **ARABICA**

COFFEE IMPACT

Unknown

TREE MANAGEMENT

Mycorrhizae are required for successful growth and allow seedlings to survive in more adverse sites. First thinning is usually carried out in year 9 or 10 then about every 5 years. Rotation cycle of 30 years is needed for optimal timber production and a cutting cycle of 15 years is usually practiced for pulpwood production

REGENERATION

Unknown

CULTIVATION

 **PLANTED**

PREVALENCE

Unknown

TREE BENEFITS AND USES

FARMER USES



Lumber, Medicinal, Product

Used as a general-purpose timber and can also be used for construction work, flooring, and boat building as it is fairly durable and heavy. Ethyl alcohol extracts of *P. merkusii* showed anti-cancer activity. In Indonesia, it has been successfully intercropped with Irish potatoes.

FARM SERVICES



Erosion Control, Unknown

BIODIVERSITY BENEFITS

Unknown

Last Updated: April 27, 2021



TREE SPECIES (SCIENTIFIC NAME)

Psidium guajava

ENGLISH COMMON NAME

Guava

INDONESIAN COMMON NAME

Jambu Biji, Jambu Kluthuk (javanese)

TREE FAMILY

MYRTACEAE

AVERAGE LEAF SIZE (CM)

10cm × **5cm**
Length Width

DISTRIBUTION

 **EXOTIC IN INDONESIA**

ELEVATIONAL RANGE (M)

0-1500m

TREE HEIGHT

SHRUB (1-10M)



NATIVE TO

Region: Americas

EXOTIC IN

SE Asia: Malaysia, Papua New Guinea, Singapore

Indonesia: Borneo, Java, Lesser Sunda Islands, Sulawesi, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM

 **ROBUSTA**  **ARABICA**

COFFEE IMPACT

 **BENEFICIAL TO COFFEE**

TREE MANAGEMENT

Propagated by seed or cutting or grafting and germinates within 10-15 days after sowing. Seedlings transferred to nursery rows or pots until they are ready for planting (after 6-12 months). Light pruning is necessary throughout the year. Irrigation necessary during dry season and fertilizer application around base at end of harvest recommended. Fuelwood cuttings cause excessive propagation as they encourage the formation of sprouts and suckers. Early morning harvest recommended as fruit deteriorates more rapidly in afternoon. Average yields are between 30-40 kg/plant in 5 year-old plants and reach maximum production of 50-70 kg at about 7 years if well managed

REGENERATION

 **REQUIRES PROPAGATION**

CULTIVATION

 **PLANTED**

PREVALENCE

 **COMMON IN COFFEE AGROFORESTRY**

TREE BENEFITS AND USES

FARMER USES



Food, Fuelwood, Lumber, Medicinal, Product

Vegetable, fruit, oil, spice, stimulant, and sugar used and consumed. The wood, bark, and young leaves are used to treat diarrhea and stomach pain. The tree is used for shade, the leaves are used for dyeing and tanning, and the wood is used to make handles and in carpentry and turnery.

FARM SERVICES



Coffee Shade

BIODIVERSITY BENEFITS

 **YES**

Fruits eaten by birds and civets.

Last Updated: April 26, 2021

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TREE SPECIES (SCIENTIFIC NAME)

Pterospermum javanicum

INDONESIAN COMMON NAME

Bayur

TREE FAMILY

MALVACEAE

AVERAGE LEAF SIZE (CM)

12-16cm × **6-8cm**
Length Width

DISTRIBUTION



NATIVE TO INDONESIA

ELEVATIONAL RANGE (M)

0-600m

TREE HEIGHT

LARGE (> 35M)



NATIVE TO

Region: Asia

Indonesia: Borneo, Java, Lesser Sunda Islands, New Guinea, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM

ROBUSTA **ARABICA**

COFFEE IMPACT

Unknown

TREE MANAGEMENT

Propagates naturally, seedlings harvested and transplanted. Fast-growing and can be harvested after 15-20 years

REGENERATION

REGENERATES NATURALLY

CULTIVATION

PLANTED

PREVALENCE

Unknown

TREE BENEFITS AND USES

FARMER USES



Lumber

Yields a red wood suitable for flooring and walls. Used in house construction and to make furniture.

FARM SERVICES

Unknown

BIODIVERSITY BENEFITS

Unknown

Last Updated: April 27, 2021

Image: <http://specimens.kew.org/herbarium/K001235132> The Herbarium Catalogue, Royal Botanic Gardens, Kew. Published on the Internet <http://www.kew.org/herbcat> [accessed on 10 12 2020].



TREE SPECIES (SCIENTIFIC NAME)

Quercus sundaica/ Lithocarpus sundaicus

INDONESIAN COMMON NAME

Pasang, Brangan pili, Empenit, Empili, Mempening, Mengkikir, Salud birar (Borneo), Pasang balung (Java)

TREE FAMILY

FAGACEAE

AVERAGE LEAF SIZE (CM)

17cm × **7cm**
Length Width

DISTRIBUTION

NATIVE TO INDONESIA

ELEVATIONAL RANGE (M)

0-2600m

TREE HEIGHT

LARGE (> 35M)



NATIVE TO

Region: Asia
Malaysia, Philippines, Singapore, Thailand
Indonesia: Borneo, Java, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM

ROBUSTA

COFFEE IMPACT

Unknown

TREE MANAGEMENT

Propagated by seed. Seed best sown as soon as it is ripe in an outdoor seed bed or directly on farm land. Needs protection from mice and squirrels. Seeds lose viability if allowed to dry out. Trees produce a deep taproot and should not be left in a nursery bed for more than 2 growing seasons without being moved or they will transplant very badly. Seeds sown directly on the farm produce the best trees

REGENERATION

Unknown

CULTIVATION

PLANTED

PREVALENCE

COMMON IN COFFEE AGROFORESTRY

TREE BENEFITS AND USES

FARMER USES



Lumber, Product

Used in house building for beams, columns, planks, and occasionally for furniture and tool handles. The bark has been used for tanning hides into leather.

FARM SERVICES



Nitrogen Fixation

BIODIVERSITY BENEFITS

Unknown

Macaques eat fruit

Last Updated: May 3, 2021

Image: <http://specimens.kew.org/herbarium/K000832522> The Herbarium Catalogue, Royal Botanic Gardens, Kew. Published on the Internet <http://www.kew.org/herbcat> [accessed on 10 12 2020].



TREE SPECIES (SCIENTIFIC NAME)

Salacca zalacca

ENGLISH COMMON NAME

Salak Palm

INDONESIAN COMMON NAME

Salak

TREE FAMILY

ARECACEAE

AVERAGE LEAF SIZE (CM)

600cm × **4cm**
Length Width

DISTRIBUTION



NATIVE TO INDONESIA

ELEVATIONAL RANGE (M)

0–500m

TREE HEIGHT

SHRUB (1–10M)



NATIVE TO

Region: Asia

Indonesia: Java, Sumatra

EXOTIC IN

SE Asia: Malaysia

Indonesia: Borneo, Lesser Sunda Islands, Maluku Islands, Sulawesi

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM



ROBUSTA



ARABICA

COFFEE IMPACT

Unknown

TREE MANAGEMENT

Propagated by seeds. Pre-soak for 24 hours in warm water and sow in containers or directly in the field or nursery bed with 2-5 seeds together in 5 cm deep holes. Takes 2-3 months to germinate. Seedlings planted during the rainy season when they are a few months old. Young palms require heavy shade which may be reduced after one year

REGENERATION

Unknown

CULTIVATION



PLANTED

PREVALENCE



COMMON IN COFFEE AGROFORESTRY

TREE BENEFITS AND USES

FARMER USES



Food

The fruits are eaten raw and also candied (manisan salak), pickled (asinan salak), and fresh unripe ones may be used in rujak, a spicy salad of unripe fruit. A closely-planted row of palms forms a secure hedge and the very spiny leaves or also cut to construct fences.

FARM SERVICES

Unknown

BIODIVERSITY BENEFITS

Unknown

Last Updated: April 27, 2021

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TREE SPECIES (SCIENTIFIC NAME)

Sandoricum koetjape

ENGLISH COMMON NAME

Kechapi

INDONESIAN COMMON NAME

Kecapi, Ketapi

TREE FAMILY

MELIACEAE

AVERAGE LEAF SIZE (CM)

10-12cm × **6-7cm**
Length Width

DISTRIBUTION



NATIVE TO INDONESIA

ELEVATIONAL RANGE (M)

0-800m

TREE HEIGHT

LARGE (> 35M)



NATIVE TO

Region: Asia

Malaysia, Papua New Guinea, Philippines, Singapore

Indonesia: Borneo, Java, Lesser Sunda Islands, Maluku Islands, New Guinea, Sulawesi, Sumatra

EXOTIC IN

SE Asia: Cambodia, Laos, Myanmar, Thailand, Vietnam

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM



COFFEE

COFFEE IMPACT



BENEFICIAL TO COFFEE

TREE MANAGEMENT

Drought resistant and can thrive without irrigation

REGENERATION

Unknown

CULTIVATION

Unknown

PREVALENCE

Unknown

TREE BENEFITS AND USES

FARMER USES



Food, Lumber, Medicinal, Product

The fruit is edible and eaten fresh or peeled, quartered, and cooked in syrup to make delicious preserves, the bark is used to tan fishing nets, the wood produces tannin and dye, and it yields a lightweight to medium weight hardwood with pale red, yellowish-red, or yellow-brown, pink tinged heartwood. The pounded leaves are used to induce sweating when applied to the skin and are used to make a decoction against diarrhea and fever, the powdered bark is an effective treatment for ringworms, and contains triterpenes with anticancer activity, and the aromatic roots are used as anti-diarrheic, anti-spasmodic, carminative (helps expel excess gas), antiseptic, and astringent, and are prescribed as a general tonic after childbirth.

FARM SERVICES



Coffee Shade, Soil Improvement, Erosion Control

BIODIVERSITY BENEFITS

Unknown

Last Updated: April 27, 2021

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TREE SPECIES (SCIENTIFIC NAME)

Schima wallichii

ENGLISH COMMON NAME

Needlewood

INDONESIAN COMMON NAME

Puspa

TREE FAMILY

THEACEAE

AVERAGE LEAF SIZE (CM)

21cm × **4cm**
Length Width

ELEVATIONAL RANGE (M)

0-2400m

TREE HEIGHT

LARGE (> 35M)



DISTRIBUTION

UNKNOWN

NATIVE TO

Region: Asia

Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand, Vietnam

Indonesia: Borneo, Java, Lesser Sunda Islands, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM

ROBUSTA

COFFEE IMPACT

BENEFICIAL TO COFFEE

REGENERATION

Unknown

CULTIVATION

PLANTED

TREE MANAGEMENT

Propagated by coppice shoots. Seeds cannot be stored. Spacing of 1.8 x 1.2 m or 3.6 x 1.8 m. Requires intermediate light. Fairly resistant to fire starting at age 5. Tolerates wide range of climates, habitats, and soils. Occurs frequently in primary lowland to montane forest, and is especially common in secondary forests, scrub and grassland, and even areas with brackish water

PREVALENCE

COMMON IN COFFEE AGROFORESTRY

TREE BENEFITS AND USES

FARMER USES



Lumber, Medicinal, Product

High density hardwood with colorful grain that is easy to work and relatively resistant to dry-wood termites. Used for medium-heavy construction and plywood. The astringent corollas are used to treat uterine disorders and hysteria. Produces tannin.

FARM SERVICES



Coffee Shade, Erosion Control, Reforestation

Reforestation: increases water recharge in catchment areas

BIODIVERSITY BENEFITS

Unknown

Last Updated: March 7, 2021

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TREE SPECIES (SCIENTIFIC NAME)

Schizostachyum brachycladum

ENGLISH COMMON NAME

Sacred bali bamboo

INDONESIAN COMMON NAME

Bambu talang, Buluh tolang (North Sumatra), Buluh Sero (Moluccas)

TREE FAMILY

POACEAE

AVERAGE LEAF SIZE (CM)

29cm × **4.75cm**
Length Width

DISTRIBUTION



NATIVE TO INDONESIA

ELEVATIONAL RANGE (M)

0–600m

TREE HEIGHT

MEDIUM (20–35M)



NATIVE TO

Region: Asia

Laos, Malaysia, Singapore, Vietnam

Indonesia: Borneo, Lesser Sunda Islands, Sulawesi, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM



ROBUSTA

COFFEE IMPACT

Unknown

TREE MANAGEMENT

Propagated by rhizome cuttings. Can be grown on any kind of soil but does best in a well-drained sandy clay or sandy loam

REGENERATION



REQUIRES PROPAGATION

CULTIVATION



PLANTED

PREVALENCE

Unknown

TREE BENEFITS AND USES

FARMER USES



Food, Product

Used to make utensils for cooking rice. Women in North Sulawesi make clothes from the fibers after chewing and washing the soft inner part of the culms to extract the fibers. Used for roofs (split lengthwise for the Toraja rice barn and traditional house in Sulawesi). Young shoots are eaten but are rather bitter.

FARM SERVICES



Erosion Control

Maintains water regulation and quantity.

BIODIVERSITY BENEFITS

Unknown

Last Updated: April 26, 2021

Image: <http://specimens.kew.org/herbarium/K000290787> The Herbarium Catalogue, Royal Botanic Gardens, Kew. Published on the Internet <http://www.kew.org/herbcat> [accessed on 10 12 2020].



TREE SPECIES (SCIENTIFIC NAME)

Shorea assamica

ENGLISH COMMON NAME

Meranti White

INDONESIAN COMMON NAME

Meranti putih

TREE FAMILY

DIPTEROCARPACEAE

AVERAGE LEAF SIZE (CM)

7cm × **4cm**
Length Width

ELEVATIONAL RANGE (M)

150–1000m

TREE HEIGHT

LARGE (> 35M)



DISTRIBUTION



NATIVE TO INDONESIA

NATIVE TO

Region: Asia

Myanmar

Indonesia: Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM



ROBUSTA

COFFEE IMPACT

Unknown

REGENERATION

Unknown

CULTIVATION



PLANTED

TREE MANAGEMENT

Propagated by seed. Soak seeds for 12 hours prior to sowing in seed beds with a cover mixture of sand and soil (1:1 ratio) or with a thin layer of sawdust. Germination usually rapid if seeds are fresh. Seedlings potted when 5 - 6 cm tall (~2 weeks after germination) into individual 15 x 23cm containers with good drainage holes at their base. Mixture of forest soil and sand recommended (3:1 ratio) as the potting medium in order to introduce the appropriate mycorrhiza to the roots. Seedlings require 50 - 60% sunlight, watering twice daily, and are planted when 30 - 40cm tall. Hardening the seedlings off in full sunlight for one month recommended prior to planting

PREVALENCE



COMMON IN COFFEE AGROFORESTRY

TREE BENEFITS AND USES

FARMER USES



Lumber

The wood is used for light construction, plywood and veneer, door and window frames, posts and beams, flooring, furniture, and boat building. It can also be used for paper pulp.

FARM SERVICES

Unknown

BIODIVERSITY BENEFITS

Unknown

Last Updated: February 4, 2021

TREE SPECIES (SCIENTIFIC NAME)

Shorea javanica

ENGLISH COMMON NAME

White Meranti

INDONESIAN COMMON NAME

Damar, Damar Mata Kucing (Southern Sumatra),
Damar Sibolga (Northern Sumatra)

TREE FAMILY

DIPTEROCARPACEAE

AVERAGE LEAF SIZE (CM)

10.75cm × **5.75cm**
Length Width

DISTRIBUTION



NATIVE TO INDONESIA

ELEVATIONAL RANGE (M)

0-500m

TREE HEIGHT

LARGE (> 35M)



NATIVE TO

Region: Asia

Indonesia: Java, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM



ROBUSTA



ARABICA

COFFEE IMPACT



BENEFICIAL TO COFFEE

REGENERATION

Unknown

CULTIVATION



PLANTED

TREE MANAGEMENT

Propagated by cuttings. Direct seeding not recommended due to severe seed predation. Plant at 100-150 trees/ha. Seedlings need shade until 1.5 m height then gradually introduce to more sunlight. Require full sunlight when they reach 3-4 m height. Beneficial mycorrhizal association which can be established with forest soils to help promote growth, and increase tolerance to drought, high soil temperatures, soil toxicity (organic and inorganic), and extremely low soil pH. Grows best on deep loamy soils with a mean annual rainfall of 3300 mm and no dry season. Tree growth is moderately fast and trees reach 40-50 m in 50 years. Natural regeneration in the forest is robust but enrichment planting may be necessary. Resin can be harvested starting at 15-50 years and continue for 30 years. Tree rotation is approximately 50 years due to reduced photosynthetic and metabolic capacity if regular tapped by this age. Tree density of 100 trees/ha has an estimated resin production of 48 t/ ha per year.

PREVALENCE



COMMON IN COFFEE AGROFORESTRY

TREE BENEFITS AND USES

FARMER USES



Food, Lumber, Product

Wood is used as plywood and veneer and its resin is used in paints and varnishes, in the linoleum industry, pharmaceuticals, cosmetic products, and as a food additive. Traditionally, the resin has been used for torches, caulking boats and baskets, and coloring batik. About 20 years after planting, it can become the main source of income and can last 40-50 years (depending on the intensity of tapping).

FARM SERVICES



Coffee Shade, Soil Improvement

Soil improvement: roots have mycorrhizal association absorb and accumulate nitrogen, phosphorus, potassium and calcium

BIODIVERSITY BENEFITS



YES

Used by many birds for foraging, perching, and nesting.

Last Updated: February 4, 2021



TREE SPECIES (SCIENTIFIC NAME)

Shorea platyclados

INDONESIAN COMMON NAME

Meranti bukit, Banio (Sumatra), Ketir (South Kalimantan), Meranti cingham (Eastern Sumatra)

TREE FAMILY

DIPTEROCARPACEAE

AVERAGE LEAF SIZE (CM)

7.5cm × **2.5cm**
Length Width

DISTRIBUTION

 **NATIVE TO INDONESIA**

ELEVATIONAL RANGE (M)

700–1350m

TREE HEIGHT

LARGE (> 35M)



NATIVE TO

Region: Asia
Malaysia, Singapore, Thailand
Indonesia: Borneo, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM

 **ROBUSTA**  **ARABICA**

COFFEE IMPACT

Unknown

TREE MANAGEMENT

Propagated by seed. Sow seeds as soon as possible and recommended to soak the seed for 12 hours prior to sowing. When seedlings are 5 - 6cm tall (~2 weeks after germination) pot into individual 15 x 23 cm containers with good drainage holes. Use mixture of forest soil and sand (3:1 ratio) as potting medium in order to introduce the appropriate mycorrhiza to the roots. Place seedlings in 50 - 60% sunlight and water twice daily. Seedlings can be planted when 30 - 40cm tall and should be hardened off in full sunlight for one month prior to planting

REGENERATION

Unknown

CULTIVATION

 **PLANTED**

PREVALENCE

Unknown

TREE BENEFITS AND USES

FARMER USES



Fuelwood, Lumber

Wood is used for making bridges, wharves, beams, and for applications where great strength is required.

FARM SERVICES

Unknown

BIODIVERSITY BENEFITS

Unknown

Last Updated: February 4, 2021

Image: <http://specimens.kew.org/herbarium/K000700664> The Herbarium Catalogue, Royal Botanic Gardens, Kew. Published on the Internet <http://www.kew.org/herbcat> [accessed on 10 12 2020].



TREE SPECIES (SCIENTIFIC NAME)

Shorea sumatrana

INDONESIAN COMMON NAME

Tengkawang

TREE FAMILY

DIPTEROCARPACEAE

AVERAGE LEAF SIZE (CM)

10.5cm × 5.5cm

Length Width

ELEVATIONAL RANGE (M)

350–850m

TREE HEIGHT

MEDIUM (20–35M)



DISTRIBUTION



NATIVE TO INDONESIA

NATIVE TO

Region: Asia

Malaysia, Singapore, Thailand

Indonesia: Java, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM



ROBUSTA

COFFEE IMPACT

Unknown

REGENERATION

Unknown

CULTIVATION



PLANTED

TREE MANAGEMENT

Propagated by seed. Recommended to sow as soon as possible and to soak the seed for 12 hours prior to sowing. Sow in seedbeds and cover with a mixture of sand and soil (1:1 ratio) or with a thin layer of sawdust. Pot seedlings 5-6 cm tall (~2 weeks after germination) into individual 15 x 23cm containers with good drainage holes. Recommended to use a mixture of forest soil and sand (3:1 ratio) as the potting medium in order to introduce the appropriate mycorrhiza to the roots. Place seedlings in 50 - 60% sunlight and water twice daily. Harden seedlings off in full sunlight for one month before planting. Can be planted when 30 - 40cm tall

PREVALENCE



COMMON IN COFFEE AGROFORESTRY

TREE BENEFITS AND USES

FARMER USES



Fuelwood, Lumber, Product

The seed can be used in making soap, candles, polishes, and cosmetics. The wood is used for light construction, flooring, exterior joinery, musical instruments, boxes, and crates.

FARM SERVICES

Unknown

BIODIVERSITY BENEFITS

Unknown

Last Updated: February 4, 2021

Image: <http://specimens.kew.org/herbarium/K000700512> The Herbarium Catalogue, Royal Botanic Gardens, Kew. Published on the Internet <http://www.kew.org/herbcat> [accessed on 10 12 2020].



TREE SPECIES (SCIENTIFIC NAME)

Styrax benzoin

ENGLISH COMMON NAME

Benzoin, Gum Benjamin

INDONESIAN COMMON NAME

Kemenyan

TREE FAMILY

STYRACACEAE

AVERAGE LEAF SIZE (CM)

8-10cm × **3-4cm**
Length Width

DISTRIBUTION

NATIVE TO INDONESIA

ELEVATIONAL RANGE (M)

100-1600m

TREE HEIGHT

MEDIUM (20-35M)



NATIVE TO

Region: Asia, Southeast Asia

Bangladesh, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Thailand, Vietnam

Indonesia: Java, Lesser Sunda Islands, Sumatra

EXOTIC IN

Indonesia: Borneo

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM

COFFEE

COFFEE IMPACT

Unknown

TREE MANAGEMENT

Propagated by seed and cuttings. Found in mixed primary tropical forests in rich, clayey soils and grows well with other trees and shrubs. Prefers well-draining, lime free, loamy soils with partial to full sun.

REGENERATION

REGENERATES NATURALLY

CULTIVATION

PLANTED

PREVALENCE

COMMON IN COFFEE AGROFORESTRY

TREE BENEFITS AND USES

FARMER USES



Food, Medicinal, Product, Ceremonial

Resin from bark used to make food products such as dairy products, chocolate flavoring, and syrups. Resin used medicinally as an antiseptic, expectorant, astringent, and to support the circulatory system and treat coughs, bronchitis, colds, and sore throat. Used externally to treat wounds, skin ulcers and allergies, cold sores, warts, and to soothe dry skin. Resin is also used as incense and in cosmetics as an antioxidant and to make fragrances for detergents, soaps, lotions, and shampoos.

FARM SERVICES



Coffee Shade, Reforestation

BIODIVERSITY BENEFITS

YES

Eaten by porcupines and deer.

Last Updated: May 18, 2021

Image: Paul Little, ©RBGKew



TREE SPECIES (SCIENTIFIC NAME)

Swietenia macrophylla

ENGLISH COMMON NAME

Mahogany

INDONESIAN COMMON NAME

Mahoni

TREE FAMILY

MELIACEAE

AVERAGE LEAF SIZE (CM)

≤ **60cm** × **3-5cm**
Length Width

DISTRIBUTION

EXOTIC IN INDONESIA

ELEVATIONAL RANGE (M)

0-1500m

TREE HEIGHT

LARGE (> 35M)



NATIVE TO

Region: Americas

EXOTIC IN

SE Asia: Laos, Thailand, Vietnam

Indonesia: Java, Lesser Sunda Islands, Sulawesi, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM

ROBUSTA **ARABICA**

COFFEE IMPACT

BENEFICIAL TO COFFEE

TREE MANAGEMENT

Spacing at 10 x 3 m (333 stems/ha) for pure plantation because it requires large amounts of light. Young trees fairly tolerant to shade but full overhead light combined with side protection is necessary for optimum growth. Tree is self-pruning and generally pruning is not necessary if established with sufficiently wide spacing. Rotation age is 30-35 years when grown for timber with a final stocking rate of 150-250 stems/ha.

REGENERATION

Unknown

CULTIVATION

PLANTED

PREVALENCE

Unknown

TREE BENEFITS AND USES

FARMER USES



Livestock Forage, Fuelwood, Lumber, Medicinal, Product

The wood is used for building houses, veneer, furniture, plywood, heavy construction, and fences and has can be sold in domestic and international markets, providing long-term income sources. The heartwood is red-brown in appearance and the bark is used for dyeing and tanning leather. Bitter honey produced by honeybees feeding from this tree and dried seeds are used to make a medicinal tea to lower blood pressure and treat diabetes.

FARM SERVICES



Coffee Shade, Soil Improvement, Erosion Control, Reforestation

Erosion control: when planted at high density due to extensive root system

BIODIVERSITY BENEFITS

YES

Used by Javan loris as connectivity. Potential for invasiveness. May invade native forest communities, especially following disturbance- should not be planted in close proximity to areas of high nature conservation significance. Food source for honeybees.

Last Updated: April 27, 2021

Image: <http://specimens.kew.org/herbarium/K000542905> The Herbarium Catalogue, Royal Botanic Gardens, Kew. Published on the Internet <http://www.kew.org/herbcat> [accessed on 10 12 2020].



TREE SPECIES (SCIENTIFIC NAME)

Swietenia mahagoni

ENGLISH COMMON NAME

Mahogany

INDONESIAN COMMON NAME

Mahoni

TREE FAMILY

MELIACEAE

AVERAGE LEAF SIZE (CM)

≤60cm × 2-3cm
Length Width

DISTRIBUTION

 **EXOTIC IN INDONESIA**

ELEVATIONAL RANGE (M)

100-500M

TREE HEIGHT

LARGE (> 35M)



NATIVE TO

Region: Americas

EXOTIC IN

SE Asia: Laos, Thailand

Indonesia: Java, Lesser Sunda Islands, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM

 **ROBUSTA**  **ARABICA**

COFFEE IMPACT

Unknown

TREE MANAGEMENT

Spacing at 10 x 3 m (333 stems/ha) for pure plantation because it requires large amounts of light. Seedlings require light and are damaged by insects in dense shade. Irregular canopy cover is recommended as trees do not develop if the overhead shade is too dense

REGENERATION

Unknown

CULTIVATION

 **PLANTED**

PREVALENCE

 **COMMON IN COFFEE AGROFORESTRY**

TREE BENEFITS AND USES

FARMER USES



Lumber, Medicinal

Bitter honey produced by honeybees feeding from this tree and dried seeds are used to make a medicinal tea to lower blood pressure and treat diabetes

FARM SERVICES

Unknown

BIODIVERSITY BENEFITS

 **YES**

Used for foraging and perching by many bird species. Food source for honeybees.

Last Updated: April 27, 2021

Image: <http://specimens.kew.org/herbarium/K000380879> The Herbarium Catalogue, Royal Botanic Gardens, Kew. Published on the Internet <http://www.kew.org/herbcat> [accessed on 10 12 2020].



TREE SPECIES (SCIENTIFIC NAME)

Syzygium aqueum

ENGLISH COMMON NAME

Water apple

INDONESIAN COMMON NAME

Jambu air

TREE FAMILY

MYRTACEAE

AVERAGE LEAF SIZE (CM)

16cm × **9.25cm**
Length Width

DISTRIBUTION



NATIVE TO INDONESIA

ELEVATIONAL RANGE (M)

0-1200m

TREE HEIGHT

SHRUB (1-10M)



NATIVE TO

Region: Asia, Oceania

Malaysia, Papua New Guinea, Singapore

Indonesia: Borneo, Java, Lesser Sunda Islands, Maluku Islands, New Guinea, Sulawesi, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM

ROBUSTA **ARABICA**

COFFEE IMPACT

BENEFICIAL TO COFFEE

TREE MANAGEMENT

Unknown

REGENERATION

REQUIRES PROPAGATION

CULTIVATION

PLANTED

PREVALENCE

COMMON IN COFFEE AGROFORESTRY

TREE BENEFITS AND USES

FARMER USES



Food, Fuelwood, Lumber, Medicinal, Product

Vegetable and fruit used and consumed and young water apple leaves are used to wrap snacks of fermented sticky rice. Used medicinally for its antibiotic activity. The tree is used for shade and the wood used for construction.

FARM SERVICES



Coffee Shade

Maintains water regulation and quantity.

BIODIVERSITY BENEFITS

YES

Food source for birds and insects.

Last Updated: April 26, 2021

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TREE SPECIES (SCIENTIFIC NAME)

Syzygium aromaticum

ENGLISH COMMON NAME

Clove

INDONESIAN COMMON NAME

Cengkeh

TREE FAMILY

MYRTACEAE

AVERAGE LEAF SIZE (CM)

9.5cm × **4.5cm**
Length Width

ELEVATIONAL RANGE (M)

0-1000m

TREE HEIGHT

SMALL (10-20M)



DISTRIBUTION



NATIVE TO INDONESIA

NATIVE TO

Region: Asia

Indonesia: Maluku Islands, New Guinea

EXOTIC IN

Indonesia: Borneo, Java, Lesser Sunda Islands, Sulawesi, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM

ROBUSTA **ARABICA**

COFFEE IMPACT

Unknown

REGENERATION

REQUIRES PROPAGATION

CULTIVATION

PLANTED

PREVALENCE

COMMON IN COFFEE AGROFORESTRY

TREE MANAGEMENT

Propagates by seed from selected mother trees extracted from the fresh fruit. Seeds germinate in 2-6 weeks and seedlings are raised in shaded nursery beds. Seedlings respond positively to controlled watering, excellent drainage, adequate spacing for sturdy growth, and timely hardening-off by reduced shading and watering. Saplings should be planted under temporary shade once they reach a height of >50 cm (within one year). In the dry season, young trees may need extra water. Standard spacing is 8 m x 8 m but spacing from 6 m x 8 m to 8 m x 11 m optimal and rectangular pattern facilitates intercropping in the early years. Prefers deep, fertile, and moist but well-drained soil (fails to flower in very moist conditions) in either full sun or partial shade. Use periodic summer irrigation. Fertilization with manure in with shallow trenches ~50-150 cm away from the tree. 15 kg of organic manure, 18 g phosphorous, and 50 g potash should be applied per plant for young trees and 40-50 kg of organic manure, 250 g phosphorous, 300 g nitrogen, and 750 g potash for mature trees (≥15 years). Organic manure applied at the beginning of monsoons and fertilizers applied twice from May-June and September-October. Mulching with fallen leaves and application of river-silt are also beneficial and weeding should be done at regular intervals. Thinning recommended to reduce branch overcrowding in trees. Dead and diseased shoots should be removed 1-2x/year. Above 1000 masl they generally do not produce until 6-15 years of age and attain full production at 20-30 years with a bumper clove harvest only occurring every 3-4 years interspersed with years of poor harvest. Can live more than 100 years and is commonly intercropped.

TREE BENEFITS AND USES

FARMER USES



Food, Fuelwood, Medicinal, Product

The fruit is consumed and flower buds used as a spice, it is intensively used in Indonesia for manufacturing kretek cigarettes, and distillation of cloves produces an oil used in the flavoring and perfume industry. Due to its flavor and antiseptic properties, this oil (eugenol) is used in soaps, detergents, toothpaste, and pharmaceutical products. The oil is also a potent bactericide and nematocidal and is used to suppress toothache, bad breath, and as a stimulant and carminative (helps expel excess gas).

FARM SERVICES

Unknown

BIODIVERSITY BENEFITS

Unknown

Last Updated: February 4, 2021

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TREE SPECIES (SCIENTIFIC NAME)

Syzygium cerasiforme

ENGLISH COMMON NAME

Common kelat

INDONESIAN COMMON NAME

Salam, Nagasari, Ki sireum, Gelam (Javanese)

TREE FAMILY

MYRTACEAE

AVERAGE LEAF SIZE (CM)

9cm × **3.5cm**
Length Width

DISTRIBUTION



NATIVE TO INDONESIA

ELEVATIONAL RANGE (M)

0-2000M

TREE HEIGHT

MEDIUM (20-35M)



NATIVE TO

Region: Asia

Cambodia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand, Vietnam

Indonesia: Borneo, Java, Lesser Sunda Islands, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM



COFFEE

COFFEE IMPACT

Unknown

TREE MANAGEMENT

Propagated by seeds. Best sown as soon as it is ripe. Seeds also dispersed naturally by animals.

REGENERATION



REGENERATES NATURALLY

CULTIVATION



PLANTED

PREVALENCE

Unknown

TREE BENEFITS AND USES

FARMER USES



Food, Lumber, Medicinal, Product

The wood is used in construction. The fruit and pulp are eaten and the roots and young shoots are used in local medicine. The bark is a source of tannins.

FARM SERVICES

Unknown

BIODIVERSITY BENEFITS

Unknown

Last Updated: February 17, 2021

Image: <http://specimens.kew.org/herbarium/K000565378> The Herbarium Catalogue, Royal Botanic Gardens, Kew. Published on the Internet <http://www.kew.org/herbcat> [accessed on 10 12 2020].



TREE SPECIES (SCIENTIFIC NAME)

Syzygium malaccense

ENGLISH COMMON NAME

Malay Apple

INDONESIAN COMMON NAME

Jambu bol

TREE FAMILY

MYRTACEAE

AVERAGE LEAF SIZE (CM)

26.5cm × 13.5cm

Length Width

ELEVATIONAL RANGE (M)

0-2700m

TREE HEIGHT

SMALL (10-20M)



DISTRIBUTION



NATIVE TO INDONESIA

NATIVE TO

Region: Asia, Oceania

Cambodia, Laos, Malaysia, Myanmar, Papua New Guinea, Singapore, Thailand, Vietnam

Indonesia: New Guinea

EXOTIC IN

SE Asia: Philippines

Indonesia: Borneo, Java, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM



ROBUSTA



ARABICA

COFFEE IMPACT



BENEFICIAL TO COFFEE

REGENERATION



REGENERATES NATURALLY

CULTIVATION



PLANTED

TREE MANAGEMENT

Plant at spacing between 6-8 m. Manuring, weeding, mulching, and watering ensures rapid growth of young trees. Little management needed after 2 years. Fruit producing trees will benefit from fertilizer applied after harvest and supplemented when inflorescence forms. Restricted to the wetter climates, requires a reliable water supply, and often planted along streams or ponds.

PREVALENCE



COMMON IN COFFEE AGROFORESTRY

TREE BENEFITS AND USES

FARMER USES



Food, Lumber, Medicinal

Over 80% of the fruit is edible, the ripe fruit is sweet, mainly eaten fresh, is often stewed with other fruits, and can be sold at markets. The tree is used for shade and various parts of the tree are used in traditional medicine, due to its antibiotic activity. In particular the bark, leaves, and roots of Malay apple are used against a number of different ailments.

FARM SERVICES



Coffee Shade

BIODIVERSITY BENEFITS

Unknown

Last Updated: April 28, 2021

Image: Isner Manalu



TREE SPECIES (SCIENTIFIC NAME)

Syzygium polyanthum

ENGLISH COMMON NAME

Indonesian bay leaf

INDONESIAN COMMON NAME

Salam, Manting (Javanese), Ubar Serai (Sumatra)

TREE FAMILY

MYRTACEAE

AVERAGE LEAF SIZE (CM)

10.5cm × 4.75cm

Length Width

ELEVATIONAL RANGE (M)

0–1000M

TREE HEIGHT

MEDIUM (20–35M)



DISTRIBUTION



NATIVE TO INDONESIA

NATIVE TO

Region: Asia

Cambodia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand, Vietnam

Indonesia: Borneo, Java, Lesser Sunda Islands, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM



ROBUSTA

COFFEE IMPACT

Unknown

REGENERATION



REGENERATES NATURALLY

CULTIVATION



PLANTED

TREE MANAGEMENT

Propagated by seeds, cuttings, air layering, or collecting wild saplings from under mature trees. Seeds should be sown fresh from the fruit as they lose viability very rapidly and after 4-6 weeks it rarely germinates. Sow on the surface of loose soil and under shade. Do not bury them as this seriously reduces the germination percentage. Germination starts 1-3 weeks after sowing and is complete after 5-12 weeks. For shade, plant at 6 m x 6 m. For timber production, plant at 2 m x 3 m. Regular pruning is tolerated

PREVALENCE



COMMON IN COFFEE AGROFORESTRY

TREE BENEFITS AND USES

FARMER USES



Food, Lumber, Medicinal

Ripe fruits are edible and slightly astringent, and the aromatic leaves are added early on as a spice, either fresh or dried, and left to cook with various meat, fish, rice, and vegetable dishes as their flavor develops gradually. Leaf and bark extracts are used medicinally against diarrhea and pounded leaves, bark, and roots are applied as poultices against itches. The wood is used for house building and furniture.

FARM SERVICES

Unknown

BIODIVERSITY BENEFITS

✓ **YES**

Used by Javan loris as connectivity. Seeds dispersed by birds.

Last Updated: April 26, 2021

Image: <http://specimens.kew.org/herbarium/K000821453> The Herbarium Catalogue, Royal Botanic Gardens, Kew. Published on the Internet <http://www.kew.org/herbcat> [accessed on 10 12 2020].

TREE SPECIES (SCIENTIFIC NAME)

Syzygium polycephalum

INDONESIAN COMMON NAME

Gowok, Kupa

TREE FAMILY

MYRTACEAE

AVERAGE LEAF SIZE (CM)

16cm × **6.5cm**
Length Width

DISTRIBUTION



NATIVE TO INDONESIA

ELEVATIONAL RANGE (M)

200-1800m

TREE HEIGHT

SMALL (10-20M)



NATIVE TO

Region: Asia

Indonesia: Borneo, Java, Lesser Sunda Islands, Sulawesi, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM



COFFEE

COFFEE IMPACT

Unknown

TREE MANAGEMENT

Propagated by seed and grafting. Spacing 14 m x 14 m

REGENERATION

Unknown

CULTIVATION



PLANTED

PREVALENCE

Unknown

TREE BENEFITS AND USES

FARMER USES



Food, Fuelwood, Lumber

Fruits can be sold commercially and are eaten raw or candied, have an agreeable sour taste, and are often made into jelly. Young shoots are eaten as a vegetable. The wood is used for house construction.

FARM SERVICES

Unknown

BIODIVERSITY BENEFITS

Unknown

Last Updated: February 4, 2021



TREE SPECIES (SCIENTIFIC NAME)

Tectona grandis

ENGLISH COMMON NAME

Teak

INDONESIAN COMMON NAME

Jati

TREE FAMILY

LAMIACEAE

AVERAGE LEAF SIZE (CM)

13-75cm × 10-40cm
Length Width

ELEVATIONAL RANGE (M)

0-1200m

TREE HEIGHT

LARGE (> 35M)



DISTRIBUTION

EXOTIC IN INDONESIA

NATIVE TO

Region: Asia

Cambodia, Laos, Myanmar, Thailand, Vietnam

EXOTIC IN

SE Asia: Malaysia, Philippines, Singapore

Indonesia: Java, Lesser Sunda Islands, Sulawesi, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM

ROBUSTA ARABICA

COFFEE IMPACT

BENEFICIAL TO COFFEE

REGENERATION

Unknown

CULTIVATION

PLANTED

TREE MANAGEMENT

Propagated by seed, cuttings, suckers, and grafting. Weeding and protection from grazing animals is recommended. Intolerant of crown friction and full sunlight optimum for growth. Initial growth is rapid with height of 13 m and 10 cm dbh at 5 years, 16.5 m and 15 cm at 10 years, and 21.5 m and 23.5 cm at 20 years. Growth slows at 15-20 years. In stands of 80 year old trees max height is 45 m with a max diameter of 75 cm. Thinning recommended at 5, 10, 18, and 28 year intervals after planting and rotation period is approximately 80 years

PREVALENCE

COMMON IN COFFEE AGROFORESTRY

TREE BENEFITS AND USES

FARMER USES



Fuelwood, Lumber, Medicinal, Product

The seed is used as a diuretic and to promote growth of hair, the flower is used as a diuretic and to treat digestive issues, bronchitis, and urinary disorder, the leaf is used to treat tuberculosis, and the bark is used to treat bronchitis. Its wood has high economic value in the domestic and international markets and the tree is used for shade, produces tannin, is used to make crafts, and the leaves are used for wrapping and packing fresh meat and fish, thatching huts, and for making medium-strong boards through processing.

FARM SERVICES



Erosion Control

Erosion control: when planted at high density due to extensive root system

BIODIVERSITY BENEFITS

Unknown

Last Updated: April 28, 2021

Image: Adi Nugroho



TREE SPECIES (SCIENTIFIC NAME)

Theobroma cacao

ENGLISH COMMON NAME

Cocoa

INDONESIAN COMMON NAME

Kakao, Coklat

TREE FAMILY

MALVACEAE

AVERAGE LEAF SIZE (CM)

32.5cm × **9.5cm**
Length Width

ELEVATIONAL RANGE (M)

0-1000M

TREE HEIGHT

SMALL (10-20M)



DISTRIBUTION

EXOTIC IN INDONESIA

NATIVE TO

Region: Americas

EXOTIC IN

SE Asia: Laos, Vietnam

Indonesia: Borneo, Java, Lesser Sunda Islands, Maluku Islands, New Guinea, Sulawesi, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM

ROBUSTA **ARABICA**

COFFEE IMPACT

Unknown

REGENERATION

Unknown

CULTIVATION

PLANTED

PREVALENCE

Unknown

TREE MANAGEMENT

Propagated by seed, rooted cuttings, grafting, and budding. Hand pollination may be necessary. Young plants raised in a shaded nursery, usually in polythene bag. Plant after 4-6 months at spacing density of 1100-1200 trees/ha or wider spacings when growing conditions are exceptionally favorable. Soil requirements: at least 1.5 m deep, clay content 30-40%, a topsoil with at least 2% organic carbon, a cation exchange capacity of 120 mmol/kg and a base saturation of 35% such as well-drained Entisols (alluvial soils), deep and well-drained Inceptisols (volcanic and other origins), red or yellowish Ultisols and Alfisols (mineral-rich soils under forest). Low-hanging branches need to be pruned after 2-3 years to facilitate harvesting. To retain trees at the desired height chupons need to be removed at regular intervals

TREE BENEFITS AND USES

FARMER USES



Food, Fuelwood, Medicinal

Used to make oil and a stimulant.

FARM SERVICES

Unknown

BIODIVERSITY BENEFITS

YES

Used for foraging and perching by many bird species

Last Updated: February 17, 2021

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TREE SPECIES (SCIENTIFIC NAME)

Toona sinensis

ENGLISH COMMON NAME

Red Cedar

INDONESIAN COMMON NAME

Surian, Ingul (sumatra)

TREE FAMILY

MELIACEAE

AVERAGE LEAF SIZE (CM)

10-12cm × **4cm**
Length Width

DISTRIBUTION



NATIVE TO INDONESIA

ELEVATIONAL RANGE (M)

350-2500m

TREE HEIGHT

MEDIUM (20-35M)



NATIVE TO

Region: Asia

Laos, Malaysia, Myanmar, Singapore, Thailand, Vietnam

Indonesia: Borneo, Java, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM

ROBUSTA **ARABICA**

COFFEE IMPACT

BENEFICIAL TO COFFEE

TREE MANAGEMENT

Regenerates naturally, and seedlings are planted that are collected from cleared places under mature trees (the seed needs a certain amount of light to germinate). Often planted on farm perimeters. Fast growing, and prefers full sun. Harvested from the age of 30 years

REGENERATION

REGENERATES NATURALLY

CULTIVATION

PLANTED

PREVALENCE

COMMON IN COFFEE AGROFORESTRY

TREE BENEFITS AND USES

FARMER USES



Food, Fuelwood, Lumber, Medicinal

Wood used for flooring, construction, walls, and furniture. Leaves eaten as vegetables. Various parts of the plant, especially the bark and roots are used medicinally.

FARM SERVICES



Coffee Shade

BIODIVERSITY BENEFITS

Unknown

Last Updated: April 27, 2021

Image: <http://specimens.kew.org/herbarium/K000657873> The Herbarium Catalogue, Royal Botanic Gardens, Kew. Published on the Internet <http://www.kew.org/herbcat> [accessed on 10 12 2020].



TREE SPECIES (SCIENTIFIC NAME)

Toona sureni

ENGLISH COMMON NAME

Red Cedar

INDONESIAN COMMON NAME

Surian, Surian amba (Sumatra), Suren

TREE FAMILY

MELIACEAE

AVERAGE LEAF SIZE (CM)

10-15cm × **4-6cm**
Length Width

DISTRIBUTION



NATIVE TO INDONESIA

ELEVATIONAL RANGE (M)

1700-2100m

TREE HEIGHT

LARGE (> 35M)



NATIVE TO

Region: Asia

Cambodia, Laos, Malaysia, Myanmar, Papua New Guinea, Philippines, Singapore, Thailand, Vietnam

Indonesia: Borneo, Java, Lesser Sunda Islands, Maluku Islands, New Guinea, Sulawesi, Sumatra

COFFEE AGROFORESTRY INFORMATION

COFFEE SYSTEM

ROBUSTA **ARABICA**

COFFEE IMPACT

Unknown

TREE MANAGEMENT

Regenerates naturally, especially in sheltered, well drained areas free from weed competition. Fast growing and grows best in full sun. Common in secondary forest and occasionally primary forest

REGENERATION

REGENERATES NATURALLY

CULTIVATION

PLANTED

PREVALENCE

COMMON IN COFFEE AGROFORESTRY

TREE BENEFITS AND USES

FARMER USES



Fuelwood, Lumber, Medicinal

Wood used for building houses or fences. The bark is used as an astringent and a tonic to treat diarrhea, and leaf extracts are reported to have antibiotic activity and are used as an insect repellent. It has a high market demand and provides a long-term income source. Commonly planted as a border tree in Java and to diversify income.

FARM SERVICES

Unknown

BIODIVERSITY BENEFITS

Unknown

Last Updated: April 27, 2021

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SHADE CATALOG



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