# SUPPLEMENT (TABLE S1) REFERENCES

Agritix Sdn Bhd (2018) Xylorix Inspector. Version 3.3.2. Kuala Lumpur, Malaysia. App Store (<https://apps.apple.com/us/app/xylorix-inspector/id1380163985>), Play Store (<https://play.google.com/store/apps/details?id=com.xylorixinspectorreact&hl=en_US>). (10 March 2025).

Agritix Sdn Bhd (2020a) Xylorix PocketWood. Version 1.9.2. Kuala Lumpur, Malaysia. App Store (<https://apps.apple.com/us/app/xylorix-pocketwood/id1536371454>). (10 March 2025).

Agritix Sdn Bhd (2020b) Xylorix PocketWood. Version 1.9.1. Kuala Lumpur, Malaysia. Play Store (<https://play.google.com/store/apps/details?id=com.xylorixpocketwoodreact&hl=en_US>). (10 March 2025).

Agritix Sdn Bhd (2022) Xylorix Enforcer. Version 1.10.0. Kuala Lumpur, Malaysia. App Store (https://apps.apple.com/my/app/xylorix-enforcer/id1618671537), Play Store (<https://play.google.com/store/apps/details?id=com.xylorixenforcerreact&hl=en_US>). (10 March 2025).

AIKO-KLHK Dev (2019) AIKO-KLHK. Version 2.2.0. Bogor City, West Java, Indonesia. Play Store (<https://play.google.com/store/apps/details?id=id.codepresso.woodid&hl=en_US>). (10 March 2025).

Arévalo R, Ebanyenle E, Ebeheakey AA, Kofi E, Bonsu KA, Lambog O, Soares R, Wiedenhoeft AC (2020) Field Identification Manual for Ghanaian Timbers. Gen Tech Rep FPL-GTR-277. USDA For Serv Forest Prod Lab, Madison, WI. 130 pp. <https://research.fs.usda.gov/treesearch/60264>

Arévalo R, Wiedenhoeft AC (2022) Identification of Central American, Mexican, and Caribbean Woods. Gen Tech Rep FPL-GTR-293. USDA For Serv Forest Prod Lab, Madison, WI. 376 pp. In English and Spanish. <https://research.fs.usda.gov/treesearch/64547>

Artmvstd (2025) Wood Identifier: AI Scanner. Version 1.0.8. Medemciems, Olaine Parish, Olaine, Latvia. Play Store (<https://play.google.com/store/apps/details?id=com.artmvstd.woodIdentifier>). (16 April 2025).

Author, Author, Author, Ebeheakey AA, Author (*submitted*) WhatWood? Ghana Edition: Enhancing a wood identification field manual with smartphone functionality.

Baas P, Blokhina N, Fujii T, Gasson P, Grosser D, Heinz I, Ilic J, Xiaomei J, Miller RB, Newsom LA, Noshiro S, Richter HG, Suzuki M, Terrazas T, Wheeler EA, Wiedenhoeft AC (2004) IAWA List of microscopic features for softwood identification. IAWA J 25: 1-70. <https://www.researchgate.net/publication/286488911_IAWA_List_of_microscopic_features_for_softwood_identification>.

Barker JA, Flinders BAH (n.d.) Key to a Selection of Arid Australian Hardwoods & Softwoods. <https://keys.lucidcentral.org/keys/v3/arid/default_wip.htm>. (9 April 2025).

Brunner M, Kučera LI, Zürcher E (1995) Major Timber Trees of Guyana - A Lens Key. IAWA J 16(1): 101-103. <https://doi.org/10.1163/22941932-90001396>

Chun SK, Kim MJ, Lee WC (1994) The TISS system: A computer search routine for wood identification and physical or mechanical property information. Pages 212-213 *in* BG Butterfield, L Donaldson, and A Singh, eds The Third Pacific Regional Wood Anatomy Conference, 20-24 November 1994, Rotorua, New Zealand. IAWA J 15(3): 212-213. <https://doi.org/10.1163/22941932-90000598>

Chun SK (1999) Fiber Identification via the TISS and DELTA Systems. Journal of the Korea Furniture Society 10(1): 1-12. <https://koreascience.kr/article/JAKO199911919720105.page>

Coradin VTR, Camargos JAA, Pastore TCM, Christo AG (2010) Brazilian commercial timbers: interactive identification key based on general and macroscopic features. CD-ROM. Brazilian Forest Service, Forest Products Laboratory, Brazil.

Dallwitz MJ, Paine TA (1986) User’s Guide to the DELTA System: a General System for Processing Taxonomic Descriptions. 3rd edition. CSIRO Aust Div Entomol Rep No 13: 106 pp.

DDR Technologies INC (2025) Wood Identification App. Version 1.0.0. Fisterra, Spain. Play Store (<https://play.google.com/store/apps/details?id=com.wood.identifier&hl=en_US>). (16 April 2025).

de Pernia NE, Miller RB (1991) Adapting the Iawa List of Microscopic Features for Hardwood Identification to Delta. IAWA J 12(1): 34-50. <https://doi.org/10.1163/22941932-90001201>

Duncan T, Meacham CA (1986) MULTIPLE-ENTRY KEYS FOR THE IDENTIFICATION OF ANGIOSPERM FAMILIES USING A MICROCOMPUTER. Taxon 35(3): 492-494. <https://doi.org/10.2307/1221902>

Forest Products Laboratory of the Brazilian Forest Service (2022) Brazilian Commercial Timbers. Brazilian Forest Service, Forest Products Laboratory, Brazil. <https://keys.lucidcentral.org/keys/v4/madeiras_comerciais_do_brasil/index_en.html>. (7 April 2025).

Forestry & Forest Products Research Institute (n.d.) Wood Database of the Forestry & Forest Products Research Institute. Forestry and Forest Products Research Institute, Tsukuba, Ibaraki, Japan. <https://db.ffpri.go.jp/WoodDB/index-E.html>. (9 April 2025).

Hansen B, Rahn K (1969) Determination of angiosperm families by means of a punched-card system. Dansk Bot Arkiv 26: 1-45.

Hansen B, Rahn K (1972) Determination of angiosperm families by means of a punched-card system. Additions and corrections I. Bot Tidsskr 67: 152-153.

Hansen B, Rahn K (1979) Determination of angiosperm families by means of a punched-card system. Additions and corrections II. Bot Tidsskr 74: 177-178.

Hasegawa M (1984) Domestic Hardwood Identification System Using Personal Computer (BASIC Language). Wood and Technology: Wood Testing Report 59: 9-12. In Japanese. <https://agriknowledge.affrc.go.jp/RN/2010321247.pdf>

Heinz I (2003) Bad Wildungen University of Applied Sciences: Wood species identification with macroHOLZdata on the PC. Holz Roh Werkst 61: 48. In German. <https://doi.org/DOI:10.1007/s00107-002-0341-x>

Heiss AG (n.d.) Anatomy of European and North American Woods—An Interactive Identification Key. [https://web.archive.org/web/20220627150501/http://www.holzanatomie.at/](https://web.archive.org/web/20220627150501/http:/www.holzanatomie.at/). (21 April 2025).

IAWA Journal E (1981) Standard List of Characters Suitable for Computerized Hardwood Identification. IAWA J 2(2-3): 99-110. <https://doi.org/10.1163/22941932-90000826>

Ilic J (1987) The CSIRO Family Key for Hardwood Identification. Commonwealth Scientific and Industrial Research Organization (CSIRO), Melbourne, Australia. 171 pp.

Ilic J (1990) The CSIRO macro key for hardwood identification. Commonwealth Scientific and Industrial Research Organization (CSIRO) Australia, Highett, Victoria, Australia. 125 pp.

Ilic J (1993) Computer Aided Wood Identification Using Csiroid. IAWA J 14(4): 333-340. <https://doi.org/10.1163/22941932-90000587>

Ilic Y, Hillis WE (1984) Wood identification in CSIRO Australia. Pages 138-140 *in* S Sudo, ed Proceedings of the Pacific Regional Wood Anatomy Conference, 1-7 October 1984, Tsukuba, Ibaraki, Japan. Forestry and Forest Products Research Institute, Tsukuba, Ibaraki, Japan.

InsideWood (2004 onwards) InsideWood. <http://insidewood.lib.ncsu.edu/search>. (9 April 2025).

INSTITUT PENYELIDIKAN DAN PERHUTANAN MALAYSIA (2018) MyWoodPremium. Version 1.0.0. Kuala Lumpur, Malaysia. App Store (<https://apps.apple.com/us/app/mywoodpremium/id1457421688>). (10 March 2025).

Izumoto Y, Ojika T, Kakimoto T, Watanabe T (1987a) Identification System of Wood Assisted by Microcomputer. Memoirs of Osaka Kyoiku University III. Natural science and applied science 35(2): 193-201. In Japanese with summary in English. <https://opac-ir.lib.osaka-kyoiku.ac.jp/webopac/TD00005708>

Izumoto Y, Ojika T, Hashimoto T (1987b) Expert System for Wood Identification(I). Memoirs of Osaka Kyoiku University III. Natural science and applied science 36(1): 39-46. In Japanese with summary in English.

Izumoto Y, Ojika T, Hashimoto T, Higuchi T (1988a) Expert System for Wood Identification(II). Memoirs of Osaka Kyoiku University III. Natural science and applied science 36(2): 201-209. In Japanese with summary in English.

Izumoto Y, Ojika T, Hashimoto T, Higuchi T (1988b) Expert System for Wood Identification(III). Memoirs of Osaka Kyoiku University III. Natural science and applied science 37(1): 65-74. In Japanese with summary in English.

Izumoto Y, Hayashi S (1990) Identification System of Wood Assisted by Microcomputer(II). Memoirs of Osaka Kyoiku University III. Natural science and applied science 39(1): 87-102. In Japanese with summary in English. <https://opac-ir.lib.osaka-kyoiku.ac.jp/webopac/TD00005798>

Jiaju Y, Fang C (1990) A Computerised System for Features Image Display and Identification of Woods from China. IAWA J 11(1): 105-105. <https://doi.org/10.1163/22941932-90001154>

Jiaju Y, Fang C, HongJun L (2001) Initiation of Microcomputer Wood Identification. China Wood Industry 15(3): 31-32. In Chinese with summary in English.

Jordan Silberman (2009) ID Wood. Version 4.1.4. Carson City, Nevada. App Store (<https://apps.apple.com/us/app/i-d-wood/id325838725>). (10 March 2025).

Khanh Nguyen Trong (2024) WoodID App. Version 1.0.6. App Store (<https://apps.apple.com/gb/app/woodid-app/id6504000600>). (10 March 2025).

Koch G, Richter H, Schmitt U (2011) Design and application of CITESwoodID Computer-aided identification and description of CITES-protected timbers. IAWA J 32(2): 213-220. <https://doi.org/10.1163/22941932-90000052>

Kuroda K, Shimaji K (1984) Computerization of hardwood identification. Pages 171-173 *in* S Sudo, ed Proceedings of the Pacific Regional Wood Anatomy Conference, 1-7 October 1984, Tsukuba, Ibaraki, Japan. Wood Res Inst, Kyoto Univ, Uji, Kyoto 611, Japan.

Kuroda K (1987) Hardwood Identification Using a Microcomputer and Iawa Codes. IAWA J 8(1). <http://dx.doi.org/10.1163/22941932-90001030>

Kyatt Spessert (2024) WhatWood? Central America Ed. Version 1.0.6. Starkville, MS. App Store (<https://apps.apple.com/tr/app/whatwood-central-america-ed/id6737476229>), Play Store: (<https://play.google.com/store/apps/details?id=com.MSUwoodID.camcwoods&hl=en_US>). (3 December 2024).

Kyatt Spessert (2025) WhatWood? Ghana Ed. Version 1.0.2. Starkville, MS. App Store (<https://apps.apple.com/tr/app/whatwood-ghana-ed/id6740234963>), Play Store (<https://play.google.com/store/apps/details?id=com.MSUwoodID.ghanawoods&hl=en_US>). (10 January 2025).

LaPasha CA, Wheeler EA (1987) A Microcomputer Based System for Computer-Aided Wood Identification. IAWA J 8(4): 347-354. <https://doi.org/10.1163/22941932-90000454>

Lee W, Chun SK (1990) Computer - Aided Korean Wood Identification. Journal of Korean Wood Science and Technology 18(2): 49-66. In Korean with summary in English. <https://koreascience.kr/article/JAKO199000238218093.page>

Meacham CA (n.d.) The MEKA Home Page. Berkeley, CA. <https://ucjeps.berkeley.edu/meacham/meka/>. (15 April 2025).

Metcalfe CR, Chalk L (1950) Anatomy of the Dicotyledons. Clarendon Press, Oxford, England. 806 pp.

Miller RB (1980) Wood Identification Via Computer. IAWA J 1(4): 154-160. <https://doi.org/10.1163/22941932-90000714>

Miller RB, Pearson RG, Wheeler EA (1987) Creation of a Large Database with Iawa Standard List Characters. IAWA J 8(3): 219-232. <https://doi.org/10.1163/22941932-90001049>

Morse LE (1971) Specimen Identification and Key Construction with Time-Sharing Computers. Taxon 20(2/3): 269-282. <https://doi.org/10.2307/1218880>

Morse LE (1974) Computer programs for specimen identification, key construction and description printing using taxonomic data matrices. East Lansing: Michigan State University, East Lansing, MI. 128 pp.

Nikhil Kumar (2025) Wood Identifier AI Scanner. Version 1.2. App Store (<https://apps.apple.com/us/app/wood-identifier-ai-scanner/id6743325527>). (16 April 2025).

Pearson RG, Wheeler EA (1981) Computer Identification of Hardwood Species. IAWA J 2(1): 37-40. <https://doi.org/10.1163/22941932-90000392>

Quirk JT (1983) Data for a Computer-Assisted Wood Identification System I. Commercial Legumes of Tropical Asia and Australia. IAWA J 4(2-3): 118-130. <https://doi.org/10.1163/22941932-90000405>

Richard Schoerner (2024) Wood Identifier: AI Scanner. Version 1.0.4. App Store (<https://apps.apple.com/us/app/wood-identifier-ai-scanner/id6738324714>). (10 March 2025).

Richter HG, Trockenbrodt M (1995) Computer aided determination of wood species using the DELTA/INTKEY software. Holz Roh Werkst 53: 215–219. In German with summary in English. <https://doi.org/10.1007/BF03036196>

Richter HG, Dallwitz MJ (2000 onwards) Commercial Timbers: Descriptions, Illustrations, Identification, and Information Retrieval. <https://www.delta-intkey.com/wood/en/index.htm>. (9 April 2025).

Richter HG, Gembruch K, Koch G (2014 onwards) CITESwoodID: descriptions, illustrations, identification, and information retrieval. Version 4th April 2023. In English, French, German, and Spanish. <https://www.delta-intkey.com/citeswood/en/index.htm>. (9 April 2025).

Sarmiento C, Détienne P, Heinz C, Molino J, Grard P, Bonnet P (2011) Pl@ntwood: A Computer-Assisted Identification Tool for 110 species of amazon trees based on wood Anatomical Features. IAWA J 32(2): 221-232. <https://doi.org/10.1163/22941932-90000053>

Schoch W, Heller-Kellenberger I, Schweingruber F, Kienast F, Schmatz D (2004) Wood Anatomy of Central European Species. Swiss Federal Institute for Forest, Snow, and Landscape Research (WSL), Birmensdorf, Switzerland. <http://www.woodanatomy.ch/authors.html>. (9 April 2025).

Silva JL, Bordalo R, Pissarra J, de Palacios P (2022) Computer Vision-Based Wood Identification: A Review. Forests 13(12): 2041. <https://doi.org/10.3390/f13122041>

Simpson D, Janos D (1974) Punch card key to the families of dicotyledons of the Western Hemisphere south of the United States. Field Museum of Natural History, Chicago, IL. 16 pp. + 63 punched cards.

Southwest Forestry University (2020) EyeWood. Southwest Forestry University, Kunming, China. In English and Chinese. <https://woodlab.swfu.edu.cn>. (22 April 2025).

Sudo S (1959) Identification of Japanese Hardwoods. Bulletin of the Government Forest Experiment Station 118: 1-138.

Sven Koch (2016) macroHOLZdata. Version 2.1.3. Hamburg, Germany. App Store (<https://apps.apple.com/us/app/macroholzdata/id1120922391>), Play Store (<https://play.google.com/store/apps/details?id=de.thuenen.macroHOLZdata&hl=en_US>). (10 March 2025).

Sven Koch (2020) CITESwoodID. Version 1.1.2. Hamburg, Germany. App Store (<https://apps.apple.com/us/app/citeswoodid/id1534768227>), Play Store (<https://play.google.com/store/apps/details?id=de.bfn.CITESwoodID&hl=en_US>). (10 March 2025).

TLUTech (2025) Wood Id - Wood Identifier. Version 2023.05.03.20. California. Play Store (<https://play.google.com/store/apps/details?id=com.tlt.androidapps.wood&hl=en_US>). (16 April 2025).

Tochigi T, Shiokura T, Lantican CB, Salud CG, Madamba CB (1984) Computer assisted tropical wood identification (CATWI). Pages 174-176 *in* S Sudo, ed Proceedings of the Pacific Regional Wood Anatomy Conference, 1-7 October 1984, Tsukuba, Ibaraki, Japan. Forestry and Forest Products Research Institute, Tsukuba, Ibaraki, Japan.

UNODC (2021) ID Maderas. Version 1.0.20. Vienna, Austria. Play Store (<https://play.google.com/store/apps/details?id=com.rrgonu.idmaderas&hl=en_CA>). (10 March 2025).

Upasana Deshmukh (2025) Wood Identifier. Version 1.0. California. App Store (<https://apps.apple.com/us/app/wood-identifier/id6743319905>). (16 April 2025).

Wheeler EA, Pearson RG (1985) A Critical Review of the Iawa Standard List of Characters Formatted for the Ident Programs. IAWA J 6(2): 151-160. <https://doi.org/10.1163/22941932-90000926>

Wheeler EA, Baas P, Gasson P (1989) IAWA List of Microscopic Features for Hardwood Identification. IAWA J 10: 219-332. <https://www.researchgate.net/publication/294088872_IAWA_List_of_Microcopie_Features_for_Hardwood_Identification>

Wheeler EA, Baas P (1998) Wood Identification -A Review. IAWA J 19(3): 241-264. <https://doi.org/10.1163/22941932-90001528>

Wheeler EA (2011) InsideWood – A Web Resource For Hardwood Identification. IAWA J 32(2): 199-211. <https://doi.org/10.1163/22941932-90000051>

Wheeler EA, Gasson PE, Baas P (2020) Using The InsideWood Web Site: Potentials And Pitfalls. IAWA J 41 (4): 412-462. <https://doi.org/10.1163/22941932-bja10032>

Zhang QC, Cheng F, Lian YH (1986) Microcomputer identification of hardwood species. Scientia Silvae Sinicae 22(2): 213-217. In Chinese with summary in English.