Taxon: Acrocarpus fraxinifolius Wight ex Arn. **Family:** Fabaceae

Common Name(s): Kenya coffeeshade, mundani, pink-cedar, red-cedar, shingletree

Synonym(s): Acrocarpus combretiflorus Teijsm. & Binn.
Acrocarpus fraxinifolius var. guangxiensis S. L. Mo & Y. Wei
Acrocarpus grandis (Miq.) Miq.
Mezoneurum grande Miq.

Assessor: Chuck Chimera **Status:** Approved **End Date:** 16 Jun 2025

WRA Score: 8.0 **Designation:** H(HPWRA) **Rating:** High Risk

Keywords: Tropical Tree, Pioneer Species, Fodder, Wind-Dispersed, Coppices

Qsn #	Question	Answer Option	Answer
101	Is the species highly domesticated?	y = -3, n = 0	n
102	Has the species become naturalized where grown?		
103	Does the species have weedy races?		
201	Species suited to tropical or subtropical climate(s) - If island is primarily wet habitat, then substitute "wet tropical" for "tropical or subtropical"	0 = low, 1 = intermediate, 2 = high (see Appendix 2)	High
202	Quality of climate match data	0 = low, 1 = intermediate, 2 = high (see Appendix 2)	High
203	Broad climate suitability (environmental versatility)	y = 1, n = 0	y
204	Native or naturalized in regions with tropical or subtropical climates	y = 1, n = 0	y
205	Does the species have a history of repeated introductions outside its natural range?	y= -2, ? = -1, n = 0	y
301	Naturalized beyond native range	y = 1*multiplier (see Appendix 2), n = question 205	y
302	Garden/amenity/disturbance weed	y = 1*multiplier (see Appendix 2), n = 0	n
303	Agricultural/forestry/horticultural weed		
304	Environmental weed	y = 2*multiplier (see Appendix 2), n = 0	y
305	Congeneric weed	y = 1*multiplier (see Appendix 2), n = 0	n
401	Produces spines, thorns or burrs	y = 1, n = 0	n
402	Allelopathic	y = 1, n = 0	n
403	Parasitic	y = 1, n = 0	n
404	Unpalatable to grazing animals	y = 1, n = -1	n
405	Toxic to animals	y = 1, n = 0	n
406	Host for recognized pests and pathogens		
407	Causes allergies or is otherwise toxic to humans	y = 1, n = 0	n
408	Creates a fire hazard in natural ecosystems	y = 1, n = 0	n

Qsn #	Question	Answer Option	Answer
409	Is a shade tolerant plant at some stage of its life cycle	y = 1, n = 0	y
410	Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)	y = 1, n = 0	n
411	Climbing or smothering growth habit	y = 1, n = 0	n
412	Forms dense thickets	y = 1, n = 0	y
501	Aquatic	y = 5, n = 0	n
502	Grass	y = 1, n = 0	n
503	Nitrogen fixing woody plant	y = 1, n = 0	n
504	Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)	y = 1, n = 0	n
601	Evidence of substantial reproductive failure in native habitat	y = 1, n = 0	n
602	Produces viable seed	y = 1, n = -1	y
603	Hybridizes naturally	y = 1, n = -1	n
604	Self-compatible or apomictic	y = 1, n = -1	y
605	Requires specialist pollinators	y = -1, n = 0	n
606	Reproduction by vegetative fragmentation	y = 1, n = -1	n
607	Minimum generative time (years)	1 year = 1, 2 or 3 years = 0, 4+ years = -1	>3
701	Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)		
702	Propagules dispersed intentionally by people	y = 1, n = -1	y
703	Propagules likely to disperse as a produce contaminant	y = 1, n = -1	n
704	Propagules adapted to wind dispersal	y = 1, n = -1	y
705	Propagules water dispersed		
706	Propagules bird dispersed	y = 1, n = -1	n
707	Propagules dispersed by other animals (externally)	y = 1, n = -1	n
708	Propagules survive passage through the gut	y = 1, n = -1	n
801	Prolific seed production (>1000/m2)		
802	Evidence that a persistent propagule bank is formed (>1 yr)	y = 1, n = -1	y
803	Well controlled by herbicides		
804	Tolerates, or benefits from, mutilation, cultivation, or fire	y = 1, n = -1	y
805	Effective natural enemies present locally (e.g. introduced biocontrol agents)		

Supporting Data:

Qsn #	Question	Answer
101	Is the species highly domesticated?	n
	Source(s)	**Notes**
	CAB International. (2005). Forestry Compendium. CAB International, Wallingford, UK	[No evidence] "It grows in mixed forests in its natural range in S. India. It is also distributed throughout many areas of tropical East Asia, and has been planted in many countries in central and eastern Africa and in Central America. A. fraxinifolius timber is used for shingles, furniture and building timbers, and for tea-chests in the Himalayan region. It is also used as a second class kraft pulp. It has also been planted as a shade tree in coffee and tea plantations. It is a good source of nectar, and the foliage can be used as fodder."

102	Has the species become naturalized where grown?	
	Source(s)	**Notes**
	WRA Specialist. (2025). Personal Communication	NA

103	Does the species have weedy races?	
	Source(s)	**Notes**
	WRA Specialist. (2025). Personal Communication	NA

201	Species suited to tropical or subtropical climate(s) - If island is primarily wet habitat, then substitute "wet tropical" for "tropical or subtropical"	High
	Source(s)	**Notes**
	USDA, Agricultural Research Service, National Plant Germplasm System. (2025). Germplasm Resources Information Network (GRIN-Taxonomy). National Germplasm Resources Laboratory, Beltsville, Maryland. https://npgsweb.ars-grin.gov/gringlobal/taxon/taxonomysearch. [Accessed 16 Jun 2025]	"Native Asia-Temperate CHINA: China [Yunnan Sheng, Guangxi Zhuangzu Zizhiqu] Asia-Tropical INDIAN SUBCONTINENT: Bhutan, India, [Sikkim, Assam] Nepal INDO-CHINA: Laos, Myanmar, Thailand MALESIA: Indonesia [Jawa, Sumatera]"

202	Quality of climate match data	High
	Source(s)	**Notes**
	USDA, Agricultural Research Service, National Plant Germplasm System. (2025). Germplasm Resources Information Network (GRIN-Taxonomy). National Germplasm Resources Laboratory, Beltsville, Maryland. https://npgsweb.ars-grin.gov/gringlobal/taxon/taxonomysearch. [Accessed 16 Jun 2025]	

203	Broad climate suitability (environmental versatility)	y
	Source(s)	**Notes**

Qsn #	Question	Answer
	CAB International. (2005). Forestry Compendium. CAB International, Wallingford, UK	"Climatic amplitude (estimates) - Altitude range: 0 - 1800 m - Mean annual rainfall: 1900 - 5000 mm - Rainfall regime: summer - Dry season duration: 0 - 4 months - Mean annual temperature: 23 - 27ºC - Mean maximum temperature of hottest month: 23 - 35ºC - Mean minimum temperature of coldest month: 16 - 22ºC - Absolute minimum temperature: 2 - 17ºC"
	Vozzo, J.A. (2002). Tropical Tree Seed Manual. USDA Forest Service, Washington, D.C.	[Broad elevation range and environmental versatility in tropical regions] "The species grows in acid and calcareous soils, at elevations between sea level and 2000 m (Troup 1921). In Mexico, it prospers from sea level to 1700 m elevation, in places with annual precipitation between 500 and 3000 mm and temperatures between 15 and 26 °C."

204	Native or naturalized in regions with tropical or subtropical climates	y
	Source(s)	**Notes**
	Vozzo, J.A. (2002). Tropical Tree Seed Manual. USDA Forest Service, Washington, D.C.	"Acrocarpus fraxinifolius is native to the tropical regions of Asia. Distributed naturally in India, China, Burma, Borneo, Sumatra, Indonesia, Vietnam, and Bangladesh, the species is part of tropical evergreen and subevergreen forests."

205	Does the species have a history of repeated introductions outside its natural range?	y
	Source(s)	**Notes**
	Lemmens, R.H.M.J. (2010). Acrocarpus fraxinifolius Arn. [Internet] Record from PROTA4U. Lemmens, R.H.M.J., Louppe, D. & Oteng-Amoako, A.A. (Editors). PROTA (Plant Resources of Tropical Africa), Wageningen, Netherlands. https://uses.plantnet-project.org/en/Acrocarpus_fraxinifolius_(PROTA). [Accessed 20 Jul 2020]	"Acrocarpus fraxinifolius orginates from tropical Asia, where it occurs naturally from Nepal and India to Thailand, southern China and western Indonesia. It is widely planted within and outside its natural area of distribution, e.g. in India, tropical America, but also in several countries in tropical Africa: Liberia, Nigeria, Rwanda, Burundi, Kenya, Uganda, Tanzania, Malawi, Zambia, Zimbabwe and Madagascar."
	CAB International. (2005). Forestry Compendium. CAB International, Wallingford, UK	"It grows in mixed forests in its natural range in S. India. It is also distributed throughout many areas of tropical East Asia, and has been planted in many countries in central and eastern Africa and in Central America."
	Skolmen, R.G. 1980. Plantings on the forest reserves of Hawaii: 1910-1960. Institute of Pacific Islands Forestry, Pacific Southwest Forest & Range Experiment Station, US Forest Service, Honolulu, HI	282 planted in the Honolulu Forest Reserve (Oahu) in 1931 and 30 in the Honouliuli Forest Reserve (Oahu) in 1931

301	Naturalized beyond native range	y
	Source(s)	**Notes**
	Witt, A. & Luke, Q. (2017). Guide to the naturalized and invasive plants of Eastern Africa. CABI, Wallingford	"Present in the Shewa Region of Ethiopia but not recorded as problematic (Thulin, 1989). Often naturalized or locally abundant in higher lying areas such as the East Usambaras, Tanzania, and in green belts and urban open spaces in and around Nairobi, Kenya. Although not recorded in Uganda it has been present there for over 60 years (Dale, 1953) and may have been missed there during these surveys."

302	Garden/amenity/disturbance weed	n

Qsn #	Question	Answer
	Source(s)	**Notes**
	Witt, A. & Luke, Q. (2017). Guide to the naturalized and invasive plants of Eastern Africa. CABI, Wallingford	[A disturbance-adapted tree that negatively impacts the environment in Australia] "Forms dense stands, shading out native species. Like so many invasive plants it is a pioneer species in its native range, regenerating rapidly in burnt areas and where the soil has recently been exposed."
	Sosef, M.S.M., Hong, L.T. & Prawirohatmodjo, S. (Eds.). (1998). Plant Resources of South-East Asia. No 5(3). Timber trees: Lesser-Known Timbers. Backhuys Publishers, Leiden, The Netherlands	[Disturbance adapted] "It regenerates primarily in small, burnt areas, on open patches where fresh soil has been exposed and along newly constructed roads. A fraxinifolius is a light demander and a pioneer, but can tolerate slight shade when young."

303	Agricultural/forestry/horticultural weed	
	Source(s)	**Notes**
	Lemmens, R.H.M.J. (2010). Acrocarpus fraxinifolius Arn. [Internet] Record from PROTA4U. Lemmens, R.H.M.J., Louppe, D. & Oteng-Amoako, A.A. (Editors). PROTA (Plant Resources of Tropical Africa), Wageningen, Netherlands. https://uses.plantnet-project.org/en/Acrocarpus_fraxinifolius_(PROTA). [Accessed 20 Jul 2020]	[Reportedly competes with crops] "The tree has been recommended for reinforcing river banks and to stabilize terraces, and for use in agroforestry systems, although it has been reported to compete with crops."

304	Environmental weed	y
	Source(s)	**Notes**
	Witt, A. & Luke, Q. (2017). Guide to the naturalized and invasive plants of Eastern Africa. CABI, Wallingford	"Forms dense stands, shading out native species. Like so many invasive plants it is a pioneer species in its native range, regenerating rapidly in burnt areas and where the soil has recently been exposed. Coppices readily and grows extremely rapidly (1.3-3 m annually), producing large numbers of seeds (Whitmore and Otarola, 1976), many of which germinate under parent canopies, forming large monospecific stands, to the detriment of native plant and animal species. The winged seeds can also be dispersal over long distances and “because the seed germinate readily, may cause it to be potentially invasive” (Iplantz, 2016). Young plants often behave as climbers and stranglers of other trees. It is also known to be invasive in parts of India. In Zimbabwe it “rarely escapes in disturbed ground” (Flora of Zimbabwe, 2016)."

305	Congeneric weed	n
	Source(s)	**Notes**
	Sosef, M.S.M., Hong, L.T. & Prawirohatmodjo, S. (Eds.). (1998). Plant Resources of South-East Asia. No 5(3). Timber trees: Lesser-Known Timbers. Backhuys Publishers, Leiden, The Netherlands	[No evidence] "Acrocar-pus is a monotypic genus distributed in eastern India, Burma {Myanmar), Laos, southern China, Thailand, Sumatra and central Java. Its only species is A. fraxinifolius Arn., which is planted in many areas within and outside its natural area of distribution (e.g. in India, Africa and Central America)."
	Randall, R.P. (2017). A Global Compendium of Weeds. 3rd Edition. Perth, Western Australia. R.P. Randall	No evidence

Qsn #	Question	Answer
401	Produces spines, thorns or burrs	n
	Source(s)	Notes
	Wu, Z. Y., P. H. Raven & D. Y. Hong, eds. (2010). Flora of China. Vol. 10 (Fabaceae). Science Press, Beijing, and Missouri Botanical Garden Press, St. Louis	"Trees, buttressed, to 50 m tall or more, unarmed."

402	Allelopathic	n
	Source(s)	Notes
	CAB International. (2005). Forestry Compendium. CAB International, Wallingford, UK	"It has also been planted as a shade tree in coffee and tea plantations. It is a good source of nectar, and the foliage can be used as fodder." [No evidence. Unlikely, given use as a shade tree]

403	Parasitic	n
	Source(s)	Notes
	Wu, Z. Y., P. H. Raven & D. Y. Hong, eds. (2010). Flora of China. Vol. 10 (Fabaceae). Science Press, Beijing, and Missouri Botanical Garden Press, St. Louis	"Trees, buttressed, to 50 m tall or more, unarmed." [Fabaceae. No evidence]

404	Unpalatable to grazing animals	n
	Source(s)	Notes
	Burns, R. M., Mosquera, M., & Whitmore, J. L. (1998). Useful trees of the tropical region of North America. North American Forestry Commission, Washington, DC	"In India, mundani is not grazed, so it has an advantage over many species (Rai 1976). However, one captive barking deer (Muntiacus muntjak) in Thailand prefers mundani to several other plant species, suggesting that it is grazed in part d its natural habitat (Kanlaya 1982)."
	CAB International. (2005). Forestry Compendium. CAB International, Wallingford, UK	"It is a good source of nectar, and the foliage can be used as fodder."
	Sosef, M.S.M., Hong, L.T. & Prawirohatmodjo, S. (Eds.). (1998). Plant Resources of South-East Asia. No 5(3). Timber trees: Lesser-Known Timbers. Backhuys Publishers, Leiden, The Netherlands	"The foliage can be used as forage."

405	Toxic to animals	n
	Source(s)	Notes
	Sosef, M.S.M., Hong, L.T. & Prawirohatmodjo, S. (Eds.). (1998). Plant Resources of South-East Asia. No 5(3). Timber trees: Lesser-Known Timbers. Backhuys Publishers, Leiden, The Netherlands	"The foliage can be used as forage."
	Quattrocchi, U. (2012). CRC World Dictionary of Medicinal and Poisonous Plants: Common Names, Scientific Names, Eponyms, Synonyms, and Etymology. CRC Press, Boca Raton, FL	No evidence
	Wagstaff, D.J. (2008). International poisonous plants checklist: an evidence-based reference. CRC Press, Boca Raton, FL	No evidence

406	Host for recognized pests and pathogens	

Qsn #	Question	Answer
	Source(s)	Notes
	Sosef, M.S.M., Hong, L.T. & Prawirohatmodjo, S. (Eds.). (1998). Plant Resources of South-East Asia. No 5(3). Timber trees: Lesser-Known Timbers. Backhuys Publishers, Leiden, The Netherlands	"A fraxinifolius is also a host for the wood borer Xylosandrus compactus, a small ambrosia beetle."
	Burns, R. M., Mosquera, M., & Whitmore, J. L. (1998). Useful trees of the tropical region of North America. North American Forestry Commission, Washington, DC	"In Mexico leaf-cutter ants (Atta spp.) defoliate the trees. Termites (Nasutitermes sp.) attack the trees, possibly after infection by an unidentified fungus (Combe and Gewald 1979); they construct their covered galleries on the bark of the trl3e. In Costa Rica, the trees are free of diseases and pests, except termites (Whitmore and Otarola 1976). In Africa the species is remarkably free of pests and disease, except for termite attacks on young trees. Slight damage to weakened trees in savanna areas is caused by the fungus Armillaria mellea (Laurie 1974)."
	CAB International. (2005). Forestry Compendium. CAB International, Wallingford, UK	"Pests recorded Insects: Atractomorpha crenulata Cricula trifenestrata (tea flush worm) Eurema blanda Xylosandrus compactus (shot-hole borer) Xylosandrus fraxinifolius Fungus diseases: Ganoderma lucidum (basal stem rot: Hevea spp.) Nectria"

407	Causes allergies or is otherwise toxic to humans	n
	Source(s)	Notes
	Ogren, T. L. (2015). The Allergy-Fighting Garden: Stop Asthma and Allergies with Smart Landscaping. Ten Speed Press, Berkeley	"Plants that rank from 1 to 5 are considered low-risk plants, but the allergy potential does rise as the number increases." … "Acrocarpus fraxinifolius. 3" [Low allergy potential]
	Quattrocchi, U. (2012). CRC World Dictionary of Medicinal and Poisonous Plants: Common Names, Scientific Names, Eponyms, Synonyms, and Etymology. CRC Press, Boca Raton, FL	No evidence
	Wagstaff, D.J. (2008). International poisonous plants checklist: an evidence-based reference. CRC Press, Boca Raton, FL	No evidence

408	Creates a fire hazard in natural ecosystems	n
	Source(s)	Notes
	Sosef, M.S.M., Hong, L.T. & Prawirohatmodjo, S. (Eds.). (1998). Plant Resources of South-East Asia. No 5(3). Timber trees: Lesser-Known Timbers. Backhuys Publishers, Leiden, The Netherlands	[Colonizes burned areas, but no evidence that this tree increases fire risk in habitats in which it occurs] "A. fraxinifolius grows best in submontane areas in the humid and subhumid tropics with a short dry spell, but is very sensitive to frost. It is rare in Sumatra and Java where it occurs on fertile and constantly wet soils in the forest, sometimes on abandoned agricultural land, at 600-1200 m altitude." … "It regenerates primarily in small, burnt areas, on open patches where fresh soil has been exposed and along newly constructed roads."
	Witt, A. & Luke, Q. (2017). Guide to the naturalized and invasive plants of Eastern Africa. CABI, Wallingford	[Forms dense stands in invaded range, but not reported to increase fire risk in these ecosystems] "Coppices readily and grows extremely rapidly (1.3-3 m annually), producing large numbers of seeds (Whitmore and Otarola, 1976), many of which germinate under parent canopies, forming large monospecific stands, to the detriment of native plant and animal species."

409	Is a shade tolerant plant at some stage of its life cycle	y

Qsn #	Question	Answer
	Source(s)	**Notes**
	Lemmens, R.H.M.J. (2010). Acrocarpus fraxinifolius Arn. [Internet] Record from PROTA4U. Lemmens, R.H.M.J., Louppe, D. & Oteng-Amoako, A.A. (Editors). PROTA (Plant Resources of Tropical Africa), Wageningen, Netherlands. https://uses.plantnet-project.org/en/Acrocarpus_fraxinifolius_(PROTA). [Accessed 20 Jul 2020]	"It is a light demander and pioneer, but can tolerate slight shade when young."
	CAB International. (2005). Forestry Compendium. CAB International, Wallingford, UK	"Tolerates weeds; shade"
	WRA Specialist. (2025). Personal Communication	Ability to tolerate shade when young would facilitate establishment in forests in the Hawaiian Islands

410	**Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)**	**n**
	Source(s)	**Notes**
	Sosef, M.S.M., Hong, L.T. & Prawirohatmodjo, S. (Eds.). (1998). Plant Resources of South-East Asia. No 5(3). Timber trees: Lesser-Known Timbers. Backhuys Publishers, Leiden, The Netherlands	"...growing best in deep, well-drained, clay-loam soils with a pH of 4-7."
	CAB International. (2005). Forestry Compendium. CAB International, Wallingford, UK	"Soil descriptors - Soil texture: light; medium - Soil drainage: free - Soil reaction: acid; neutral"
	Vozzo, J.A. (2002). Tropical Tree Seed Manual. USDA Forest Service, Washington, D.C.	"The species grows in acid and calcareous soils, at elevations between sea level and 2000 m (Troup 1921)."

411	**Climbing or smothering growth habit**	**n**
	Source(s)	**Notes**
	Wu, Z. Y., P. H. Raven & D. Y. Hong, eds. (2010). Flora of China. Vol. 10 (Fabaceae). Science Press, Beijing, and Missouri Botanical Garden Press, St. Louis	"Trees, large, to 30 m tall before tree forks."

412	**Forms dense thickets**	**y**
	Source(s)	**Notes**
	Witt, A. & Luke, Q. (2017). Guide to the naturalized and invasive plants of Eastern Africa. CABI, Wallingford	"Forms dense stands, shading out native species. Like so many invasive plants it is a pioneer species in its native range, regenerating rapidly in burnt areas and where the soil has recently been exposed. Coppices readily and grows extremely rapidly (1.3-3 m annually), producing large numbers of seeds (Whitmore and Otarola, 1976), many of which germinate under parent canopies, forming large monospecific stands, to the detriment of native plant and animal species."

501	**Aquatic**	**n**
	Source(s)	**Notes**
	CAB International. (2005). Forestry Compendium. CAB International, Wallingford, UK	[Terrestrial] "It grows in mixed forests in its natural range in S. India."

502	**Grass**	**n**

Qsn #	Question	Answer
	Source(s)	**Notes**
	USDA, Agricultural Research Service, National Plant Germplasm System. (2025). Germplasm Resources Information Network (GRIN-Taxonomy). National Germplasm Resources Laboratory, Beltsville, Maryland. https://npgsweb.ars-grin.gov/gringlobal/taxon/taxonomysearch. [Accessed 16 Jun 2025]	"Genus: Acrocarpus Family: Fabaceae (alt. Leguminosae) Subfamily: Caesalpinioideae Tribe: Caesalpinieae"

503	Nitrogen fixing woody plant	n
	Source(s)	**Notes**
	Lemmens, R.H.M.J. (2010). Acrocarpus fraxinifolius Arn. [Internet] Record from PROTA4U. Lemmens, R.H.M.J., Louppe, D. & Oteng-Amoako, A.A. (Editors). PROTA (Plant Resources of Tropical Africa), Wageningen, Netherlands. https://uses.plantnet-project.org/en/Acrocarpus_fraxinifolius_(PROTA). [Accessed 17 Jul 2020]	"Apparently, Acrocarpus fraxinifolius does not have nitrogen-fixing root nodules."

504	Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)	n
	Source(s)	**Notes**
	Wu, Z. Y., P. H. Raven & D. Y. Hong, eds. (2010). Flora of China. Vol. 10 (Fabaceae). Science Press, Beijing, and Missouri Botanical Garden Press, St. Louis	"Trees, large, to 30 m tall before tree forks."

601	Evidence of substantial reproductive failure in native habitat	n
	Source(s)	**Notes**
	Sosef, M.S.M., Hong, L.T. & Prawirohatmodjo, S. (Eds.). (1998). Plant Resources of South-East Asia. No 5(3). Timber trees: Lesser-Known Timbers. Backhuys Publishers, Leiden, The Netherlands	[Rare in Malesia, but otherwise widespread native and introduced range] "Acrocarpus is a monotypic genus distributed in eastern India, Burma (Myanmar), Laos, southern China, Thailand, Sumatra and central Java. Its only species is A fraxinifolius Arn., which is planted in many areas within and outside its natural area of distribution (e.g. in India, Africa and Central America)." … "A fraxinifolius is rare in Malesia where it occurs only very locally."

Qsn #	Question	Answer
602	Produces viable seed	y
	Source(s)	Notes
	CAB International. (2005). Forestry Compendium. CAB International, Wallingford, UK	"- Seed storage orthodox - Vegetative propagation by cuttings - Stand establishment using natural regeneration; direct sowing; planting stock; wildings"
	Sosef, M.S.M., Hong, L.T. & Prawirohatmodjo, S. (Eds.). (1998). Plant Resources of South-East Asia. No 5(3). Timber trees: Lesser-Known Timbers. Backhuys Publishers, Leiden, The Netherlands	"A fraxinifolius can be propagated by seed; the use of wildlings is reported for India. Patch budding gave 80% success when establishing seed orchards. Collected seed should be left to air dry for about 10 days and can then be stored for many years in airtight containers when kept cool."
	Vozzo, J.A. (2002). Tropical Tree Seed Manual. USDA Forest Service, Washington, D.C.	"Because the seed teguments are hard and impermeable, pretreatment is required. Two forms of treatment are used: scarifying with concentrated sulfuric acid for 10 minutes or submerging the seeds for 1 minute in water at a temperature of 90 °C. They then are left soaking in cool water for 5 to 6 hours. The treated seeds are planted 2 cm deep in seedbeds, and germination occurs within 15 to 30 days. Germination is epigeal (Chavelas and Devall 1988a)."

603	Hybridizes naturally	n
	Source(s)	Notes
	Sosef, M.S.M., Hong, L.T. & Prawirohatmodjo, S. (Eds.). (1998). Plant Resources of South-East Asia. No 5(3). Timber trees: Lesser-Known Timbers. Backhuys Publishers, Leiden, The Netherlands	"Acrocarpus is a monotypic genus distributed in eastern India, Burma {Myanmar), Laos, southern China, Thailand, Sumatra and central Java. Its only species is A. fraxinifolius Arn.," [Monotypic genus. No evidence of intergeneric hybrids found]

604	Self-compatible or apomictic	y
	Source(s)	Notes
	Burns, R. M., Mosquera, M., & Whitmore, J. L. (1998). Useful trees of the tropical region of North America. North American Forestry Commission, Washington, DC	"Pollination mechanisms are unknown in mundani's natural range, but in Mexico it is autogamous." [Autogamous definition, pollination of the ovules of a flower by its own pollen; self-fertilization (opposed to allogamy)]

605	Requires specialist pollinators	n
	Source(s)	Notes
	Burns, R. M., Mosquera, M., & Whitmore, J. L. (1998). Useful trees of the tropical region of North America. North American Forestry Commission, Washington, DC	"Cunningham-van Someren (1973) reported that a mundani plantation in east Africa is visited by many birds and insects, particularly honeybees. Ten species of sunbirds f.Anthreptes and Nectarinia sp.) were recorded taking nectar from the flowers. The flowers remain on the inflorescence for several days, and the sugar content of nectar increases with time. Nectar of older flowers contained up to 52 percent sugar, which is astonishingly high."
	Tropical Plants Database, Ken Fern. (2020). Acrocarpus fraxinifolius. http://tropical.theferns.info/viewtropical.php?id=Acrocarpus+fraxinifolius. [Accessed 21 Jul 2020]	"Pollinators - Bees, Insects"

606	Reproduction by vegetative fragmentation	n
	Source(s)	Notes

Qsn #	Question	Answer
	Witt, A. & Luke, Q. (2017). Guide to the naturalized and invasive plants of Eastern Africa. CABI, Wallingford	"Coppices readily and grows extremely rapidly (1.3-3 m annually), producing large numbers of seeds (Whitmore and Otarola, 1976), many of which germinate under parent canopies, forming large monospecific stands, to the detriment of native plant and animal species." [No evidence of vegetative spread]
	Burns, R. M., Mosquera, M., & Whitmore, J. L. (1998). Useful trees of the tropical region of North America. North American Forestry Commission, Washington, DC	"Natural Regeneration. Germination under natural conditions is erratic, and the seed may remain dormant for as long as ten months."

607	Minimum generative time (years)	>3
	Source(s)	**Notes**
	Vozzo, J.A. (2002). Tropical Tree Seed Manual. USDA Forest Service, Washington, D.C.	"Acrocarpus fraxinifolius is a fast-growing tree, which annually can grow 1.3 to 3 m."
	Burns, R. M., Mosquera, M., & Whitmore, J. L. (1998). Useful trees of the tropical region of North America. North American Forestry Commission, Washington, DC	"The trees begin to flower at 7 to 9 years of age."

701	Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)	
	Source(s)	**Notes**
	Burns, R. M., Mosquera, M., & Whitmore, J. L. (1998). Useful trees of the tropical region of North America. North American Forestry Commission, Washington, DC	"At maturity the pods take on a dark brown color and fall to the ground without opening. No other methods of dispersal have been observed in Quintana Roo."
	Sosef, M.S.M., Hong, L.T. & Prawirohatmodjo, S. (Eds.). (1998). Plant Resources of South-East Asia. No 5(3). Timber trees: Lesser-Known Timbers. Backhuys Publishers, Leiden, The Netherlands	[A pioneer species that colonizes fresh soil exposed along newly constructed roads. Although seed and pods lack means of attachment, occurrence along heavily trafficked corridors could contribute to some inadvertent dispersal] "Fruit an elongated and flattened pod, long-stipitate, narrowly winged, (3-)10-18-seeded. Seed slightly lens-shaped, brown. Seedling with epigeal germination; cotyledons free, foliaceous, slightly fleshy; hypocotyl elongated; first leaves paripinnate." ..."It regenerates primarily in small, burnt areas, on open patches where fresh soil has been exposed and along newly constructed roads."

702	Propagules dispersed intentionally by people	y
	Source(s)	**Notes**
	Vozzo, J.A. (2002). Tropical Tree Seed Manual. USDA Forest Service, Washington, D.C.	"In Africa the tree is planted to provide shade in coffee plantations. Acrocarpus fraxinifolius is also cultivated as an ornamental (National Academy of Sciences 1979, Whitmore and Otarola 1976)."
	CAB International. (2005). Forestry Compendium. CAB International, Wallingford, UK	"It grows in mixed forests in its natural range in S. India. It is also distributed throughout many areas of tropical East Asia, and has been planted in many countries in central and eastern Africa and in Central America."
	Skolmen, R.G. 1980. Plantings on the forest reserves of Hawaii: 1910-1960. Institute of Pacific Islands Forestry, Pacific Southwest Forest & Range Experiment Station, US Forest Service, Honolulu, HI	282 planted in the Honolulu Forest Reserve (Oahu) in 1931 and 30 in the Honouliuli Forest Reserve (Oahu) in 1931

Qsn #	Question	Answer
703	Propagules likely to disperse as a produce contaminant	n
	Source(s)	Notes
	Burns, R. M., Mosquera, M., & Whitmore, J. L. (1998). Useful trees of the tropical region of North America. North American Forestry Commission, Washington, DC	[No evidence] "The ripe pods remaining hanging to the branches for a fairly long time (Rai 1976)." … "At maturity the pods take on a dark brown color and fall to the ground without opening. No other methods of dispersal have been observed in Quintana Roo. The trees begin to flower at 7 to 9 years of age."

704	Propagules adapted to wind dispersal	y
	Source(s)	Notes
	iplantz. (2020). Acrocarpus fraxinifolius. https://www.iplantz.com/plant/22/acrocarpus-fraxinifolius/. [Accessed 20 Jul 2020]	"The winged seedpods are designed for dispersal by wind, which can carry them afar and because the seed germinate readily, may cause it to be potentially invasive."
	CABI. (2020). Invasive Species Compendium. Wallingford, UK: CAB International. www.cabi.org/isc	"The winged seeds can also be dispersal over long distances and germinate readily." [Winged-pods may facilitate dispersal by wind]
	Burns, R. M., Mosquera, M., & Whitmore, J. L. (1998). Useful trees of the tropical region of North America. North American Forestry Commission, Washington, DC	[Winged pods may facilitate some dispersal by wind as pods fall from the trees] "The fruit is in aplanate pods that are 8 to 12 centimeters long and 1 to 2 centimeters wide, elongate, stipuled, with short wings along the adaxial suture (fig. 3); ovate, compressed seeds, narrowed at the base (Hutchinson 1964; Holdridge and Poveda 1975)." … "At maturity the pods take on a dark brown color and fall to the ground without opening. No other methods of dispersal have been observed in Quintana Roo."

705	Propagules water dispersed	
	Source(s)	Notes
	Burns, R. M., Mosquera, M., & Whitmore, J. L. (1998). Useful trees of the tropical region of North America. North American Forestry Commission, Washington, DC	"In China, mundani grows well in sunny areas, inhabiting valleys and streamsides with warm, humid weather." … "At maturity the pods take on a dark brown color and fall to the ground without opening." [Buoyancy of pods unknown. Possible that streamside trees may have pods or seeds moved by water]

706	Propagules bird dispersed	n
	Source(s)	Notes
	Witt, A. & Luke, Q. (2017). Guide to the naturalized and invasive plants of Eastern Africa. CABI, Wallingford	[Wind facilitated dispersal] "Fruits: Pods (several-seeded dry fruits that split open at maturity), green turning brown as they mature, long and flattened (8–16 cm long and 1–2 cm wide), containing 10–18 winged seeds (4.6–6.8 mm long and 3.4–4.2 mm wide)." … "The winged seeds can also be dispersal over long distances"

707	Propagules dispersed by other animals (externally)	n
	Source(s)	Notes
	Witt, A. & Luke, Q. (2017). Guide to the naturalized and invasive plants of Eastern Africa. CABI, Wallingford	[Wind facilitated dispersal. No means of external attachment] "Fruits: Pods (several-seeded dry fruits that split open at maturity), green turning brown as they mature, long and flattened (8–16 cm long and 1–2 cm wide), containing 10–18 winged seeds (4.6–6.8 mm long and 3.4–4.2 mm wide)." … "The winged seeds can also be dispersal over long distances"

708	Propagules survive passage through the gut	n

Qsn #	Question	Answer
	Source(s)	**Notes**
	Witt, A. & Luke, Q. (2017). Guide to the naturalized and invasive plants of Eastern Africa. CABI, Wallingford	[Wind facilitated dispersal. No evidence that pods or seeds are consumed or internally dispersed] "Fruits: Pods (several-seeded dry fruits that split open at maturity), green turning brown as they mature, long and flattened (8–16 cm long and 1–2 cm wide), containing 10–18 winged seeds (4.6–6.8 mm long and 3.4–4.2 mm wide)." … "The winged seeds can also be dispersal over long distances"

801	Prolific seed production (>1000/m2)	
	Source(s)	**Notes**
	Burns, R. M., Mosquera, M., & Whitmore, J. L. (1998). Useful trees of the tropical region of North America. North American Forestry Commission, Washington, DC	"Each pod contains 5 to 7 seeds, and there are 31,600 seeds per kilogram. Seeds measure 3.5 to 8.5 millimeters in diameter. At maturity the pods take on a dark brown color and fall to the ground without opening." [Seed densities under natural conditions unknown]
	Witt, A. & Luke, Q. (2017). Guide to the naturalized and invasive plants of Eastern Africa. CABI, Wallingford	[Densities unspecified] "Coppices readily and grows extremely rapidly (1.3–3 m annually), producing large numbers of seeds (Whitmore and Otarola, 1976), many of which germinate under parent canopies, forming large monospecific stands, to the detriment of native plant and animal species."

802	Evidence that a persistent propagule bank is formed (>1 yr)	y
	Source(s)	**Notes**
	Vozzo, J.A. (2002). Tropical Tree Seed Manual. USDA Forest Service, Washington, D.C.	"The seeds can be stored in polyethylene bags at room temperature for more than 1 year without losing viability (Chavelas and Devall 1988a)."
	Lemmens, R.H.M.J. (2010). Acrocarpus fraxinifolius Arn. [Internet] Record from PROTA4U. Lemmens, R.H.M.J., Louppe, D. & Oteng-Amoako, A.A. (Editors). PROTA (Plant Resources of Tropical Africa), Wageningen, Netherlands. https://uses.plantnet-project.org/en/Acrocarpus_fraxinifolius_(PROTA). [Accessed 20 Jul 2020]	"There are 13,000-47,000 dry seeds per kg. Collected seed should be left to air dry for about 10 days and can then be stored for many years in airtight containers when kept cool. However, a germination rate of only 30% after 5 years of storage has been reported. Seed should be pre treated with sulphuric acid for 10 minutes or by hot water (80°C) for 15 minutes and left to imbibe in water for 12-24 hours before it is sown in the shade. A germination rate of 80-95% within only 2-7 days is achieved after those pre-treatments. Under natural conditions some seeds may germinate within a week, while others may lie dormant for one year before germinating. "

803	Well controlled by herbicides	
	Source(s)	**Notes**
	Witt, A. & Luke, Q. (2017). Guide to the naturalized and invasive plants of Eastern Africa. CABI, Wallingford	"Appendix C. Herbicides registered or permissible with minor or emergency use permits in Australia by the Australian Pesticides and Veterinary Medicines Authority against some of the plant species included in this Field Guide (Joseph Vitelli; Department of Agriculture and Fisheries; Queensland Government; Australia; pers. comm.). (Abbreviations used: g/L = grams/litre; g/kg = grams per kilogram)" [Basal bark/Cut stump method using Triclopyr (240g/L) + Picloram (120g/L) listed for use to control Acrocarpus fraxinifolius. Efficacy has not been specified in this publication]

804	Tolerates, or benefits from, mutilation, cultivation, or fire	y
	Source(s)	**Notes**
	CAB International. (2005). Forestry Compendium. CAB International, Wallingford, UK	"- Ability to coppice"

Qsn #	Question	Answer
	Lemmens, R.H.M.J. (2010). Acrocarpus fraxinifolius Arn. [Internet] Record from PROTA4U. Lemmens, R.H.M.J., Louppe, D. & Oteng-Amoako, A.A. (Editors). PROTA (Plant Resources of Tropical Africa), Wageningen, Netherlands. https://uses.plantnet-project.org/en/Acrocarpus_fraxinifolius_(PROTA). [Accessed 20 Jul 2020]	"The tree coppices vigorously, in Rwanda some sprouts reaching 5 m after 2 years"

805	Effective natural enemies present locally (e.g. introduced biocontrol agents)	
	Source(s)	Notes
	WRA Specialist. (2025). Personal Communication	Unknown

Summary of Risk Traits:

Acrocarpus fraxinifolius (pink-cedar, shingle tree) is a deciduous tree native to tropical and temperate Asia. It is used as a shade tree in coffee plantations in India. The timber has many woodworking uses, such as furniture, cabinets, general construction, tea crates, and much more. The species also provides food for the endangered lion-tailed macaque when other fruit is scarce. It is reported to be naturalized in East Africa and reported to be an environmental weed there, several hundred trees were planted in O'ahu forest reserves in 1931, but it has not been reported to be naturalized to date. This tree forms dense stands, shading out native species. It grows extremely rapidly, from 4.2 to 9.8 feet a year and creates numerous winged seeds that can travel far distances. It also has a smothering habit and will climb and strangle other trees.

High Risk / Undesirable Traits
• Broad climate suitability
• Thrives in tropical climates
• Naturalized and reported to be an environmental weed in East Africa
• May compete with crops
• Shade tolerant when young
• Reported to form dense stands in Africa
• Reproduces by wind-dispersed seed pods
• Autogamous (capable of self-fertilization)
• Seeds may persist in soil for one year (and possibly longer)
• Coppices vigorously after cutting

Low Risk Traits
• Several hundred trees planted in Oahu forest reserves in 1931, but not reported to be naturalized to date
• Unarmed (no spines, thorns, or burrs)
• Provides fodder for livestock
• Non-toxic
• Not reported to spread vegetatively
• Reaches maturity in 7 to 9 years