

Tree factsheet

Pinus merkusii Junghuhn & de Vriese

Muchamad Muchtar, edited by Leo Goudzwaard

taxonomy	
author, year	Junghuhn & de Vriese, 1845
synonym	<i>Pinus sumatrana</i> Junghuhn; <i>P. finlaysoniana</i> ; Wallich; <i>P. latteri</i> Mason; <i>P. merkiana</i> Gordon
family	Pinaceae
Eng. Name	Sumatran pine; Tenasserim pine; Merkus pine; Mindoro pine
Dutch name	Sumatraanse den
vernacular name	Damar batu, dama bunga (Indonesia); uyam (Sumatra); tinyuben (Myanmar); tapulau (Philippines); son-songbai, son-haang-maa, kai-plueak-dam (Thailand); thông nhua, thông hai lá (Vietnam)
subspecies	
varieties	
hybrids	
cultivars, frequently planted	
references	Anonymous. Wikipedia. http://en.wikipedia.org/wiki/Pinus_merkusii
	Asia Pacific Forest Genetic Resource Programme www.apfor-gen.org/pdf_files/APFORGEN-infosheet-Pinus.pdf
	CAB International. 2002. <i>Pines of silvicultural importance</i> . CABI Publishing: Oxon, UK
	CAB International. 2005. The Forestry Compendium www.cabicompendium.org/fc
	CIRAD-Forestry Department. 2004. Tropix 5.0: Technological characteristics of 215 tropical species http://tropix.cirad.fr/asia/pinusmerkusii.pdf
	Earle, C.J. Gymnosperm database www.conifers.org/pi/pin/merkusii.htm
	IUCN. http://www.iucnredlist.org/search/details.php/32624/summ
	Laubenfels, de David J. 1988. Coniferales. p.337-453 in Flora Malesiana, Series I, Vol. 10. Dordrecht: Kluwer Academic.
	Soerianegara, I. and R.H.M.J. Lemmens (eds). 1994. in CAB International. 2002. <i>Pines of silvicultural importance</i> . CABI Publishing: Oxon, UK
morphology	
crown habit	pyramidal to conical on young trees, flatter and spreading on old trees
max. height (m)	30-50 (-70)
max. dbh (cm)	60-80 (-150)
actual sizes – location, country - oldest tree - location	70 m (De Laubenfels, 1968), the tallest pine in the Old World
leaf length (cm)	15-25 cm
leaf petiole (cm)	
leaf colour upper surface	dark green
leaf colour under surface	dark green
leaves arrangement	Spiral
flowering	May-June
flowering plant	monoecious
flower	monosexual
flower diameter pollen cones (cm)	
pollination	wind
fruit; length (cm)	cylindrical or long-ovate cone; 5-9 (-11)
fruit petiole (cm)	1 cm
seed; length	winged-nut; 1.5-2 cm

seed-wing length (cm)	0.75
weight 1000 seeds (g)	17-20
seeds ripen	October-November the following year
seed dispersal	wind
habitat	
natural distribution	Asia Mainland (Myanmar, Thailand, Laos, Cambodia, Vietnam, southern Tibet, India (eastern Himalayas of Arunachal Pradesh) Indonesia (northern Sumatra), Philippines (eastern Luzon, northwestern Mindoro)
introduced countries	Sri Lanka, Papua New Guinea, South Africa, Tanzania, Uganda, Zambia
area natural habitat	
soil type, water	Ultisols, alluvial soils, red soils, clay soils, volcanic soils; well-drained; drought tolerant
pH-KCl	4.5-5
soil fertility	poor to rich nutrient
light	light-demanding
plant communities natural area	open savanna like vegetation; also tropical broadleaf forest
climate	tropical
management	
status natural range	
status introduced range	
planted outside natural habitat since	
application	timber tree, resin
propagation	seeds; cutting, tissue culture (vegetative)
regeneration	planting
optimal gap size for regeneration	? for timber production 3x1m or 3x2m; for resin production 4x4m (Soerianegara and Lemmens, 1993)
resprouting after cutting	no
growth rate (M.A.I. in $m^3ha^{-1}j^{-1}$)	22.4 m^3ha^{-1} per 25 year rotation
diseases	<i>Mycosphaerella pini</i> (Needle-blight, previously known as <i>Dothistroma pini</i>)
insects	<i>Milionia basalis</i> ; <i>Pineus pini</i>
wood	
trade name	
wood structures key characteristics of pores	tracheids, wood light brown with dark red veins, numerous resin canals
density heartwood (kg/m^3)	880-960
elastic modulus (N/mm^2)	16370
fungi class durability heartwood	fungus 4 (poorly-durable)
heartwood colour	yellowish to orange-brown
sapwood colour	cream
contents	resin in the wood
products	light construction, pulp, woodware, common furniture, chop-sticks, matches, veneers, fuelwood, charcoal
non-timber products	
resin	used in turpentine, medicine, paints, printing and in the perfume industry