

Forest Ecology and Forest Management Group

Tree factsheet

images at pages 3, 4, 5, 6

Castanea sativa Mill.

Castariea sativa iviili.	
taxonomy	
author, year	Miller,
synonym	C. vesca Gaertn.
Family	Fagaceae
Eng. Name	Sweet Chestnut tree, Spanish Chestnut, European Chestnut
Dutch name	Tamme kastanje
subspecies	
varieties	-
hybrids	-
cultivars, frequently used	
references	Weeda 2003, Nederlandse oecologische flora, vol.1 (Dutch)
	PFAF database http://www.pfaf.org/index.html
morphology	
crown habit	tree, round
max. height (m)	30
max. dbh (cm)	300
actual size Europe	2000? years old, d() 197, Etna, Sicily , Italy
actual size The Netherlands	year 1600-1700, d (130) 270, h 25, Kabouterboom, Beek-Ubbergen year 1810-1820, d(130) 149, h 30
leaf length (cm)	10-27
leaf petiole (cm)	2-3
leaf colour upper surface	green
leaf colour under surface	green
leaves arrangement	alternate
flowering	June
flowering plant	monoecious
flower	monosexual
flower diameter (cm)	1
flower male catkins length (cm)	8-12
pollination	wind
fruit; length	burr (Dutch: bolster) containing 2-3 nuts; 6-8 cm
fruit petiole (cm)	1
seed; length	nut; 5-6 cm
seed, length (cm)	-
weight 1000 seeds (g)	300-1000
seeds ripen	September
seed dispersal	rodents: <i>Apodemus</i> -species – Wood mice - bosmuizen
Jood dispersal	rodents: <i>Sciurus vulgaris</i> - Squirrel - Eekhoorn
	birds: <i>Garulus glandarius</i> – Jay –Gaai
	birus. Garulus giariuarius – Jay – Gadi

habitat	
natural distribution	Europe, West Asia
in N.W. Europe since	9000 B.C.
natural areas The Netherlands	forests
geological landscape types The Netherlands	loss-covered terraces, ice pushed ridges
(Hoek 1997)	The second secon
forested areas The Netherlands	loamy and sandy soils.
area Netherlands	< 1700 (2002, Probos)
% of forest trees in the Netherlands	< 0,7 (2002, Probos)
soil type	(0,1 (2002,1 10000)
pH-KCl	indifferent
soil fertility	nutrient medium to rich
light	highly shade tolerant as a sapling, shade tolerant when mature
• Shade tolerance	3.2
(0=no tolerance to 5=max. tolerance)	5.2
• drought tolerance	3.5
(0=no tolerance to 5=max. tolerance)	
• waterlogging tolerance	1.3
(0=no tolerance to 5=max. tolerance)	1.0
plant communities in the Netherlands	klasse der Eiken-beukenbossen op voedselarme grond:
plant communities in the Netherlands	-Deschampsio-fagetum - Bochtige smele-beukenbos
	-Fago-Quercetum - Beuken-eikenbos
	-1 ago-Quercetum - Deuken-eikenbos
management	
status Europe	frequent indigenous species in forests
status The Netherlands	frequent exotic (naturalized) species in forests and urban environment
application	timber tree, fruit tree
propagation	seed; named cultivars by grafting, budding
regeneration	planting; natural regeneration from seed
optimal gap size for regeneration	1-2x tree length
first plantation Netherlands	1-2X tiee length
resprouting after cutting	good
growth rate (M.A.I. in m ³ ha ⁻¹ j ⁻¹)	9000
diseases	Cryphonectria parasitica (syn. Endothia parasitica) – Chestnut blight
uiseases	(Kastanjekanker)
	Phytophtera spp. – ink disease – roots and root collar
insects	free from plague insects
IIISECIS	Tree from plague insects
wood	
wood	Chestnut (Kastanje)
wood structures key characteristics of pores	ring porous. radial, flame-like groups of vessels in latewood.
vol. mass heartwood (kg/m3)	(490-) 540 (-650) (12% moisture content)
elastic modulus (N/mm²)	8.800
oldono moduluo (14/11111)	0.000
durability heartwood	fungus 2
heartwood color	light brown to dark brown
sapwood color	grey-white
contents	tannins (looizuur)
products	construction wood, furniture, tools, flooring, cladding, poles, cutlery, turnery,
producto	firewood
non-timber products	
chestnut fruits	roasted or cooked edible; flour, sugar extracted from the seeds
OHOOMAC ITAILO	reacted of cooked dame, hear, dagar extracted from the secus

[●]Ülo Niinemets and Fernando Valladares. 2006. Tolerance to shade, drought, and waterlogging of temperate Northern Hemisphere trees and shrubs. Ecological Monographs 76:521–547



young leaves in spring



male inflorescence in June



female inflorescence in June



burr and nut in Autumn, photo © Arboretum Tervuren



buds in winter

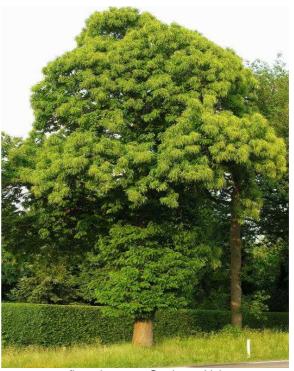
photos 4x ©Leo Goudzwaard



young tree at Belmonte Arboretum, Wageningen



crown of a mature Chestnut, Wageningen photos 4x ©Leo Goudzwaard



mature tree, flowering, near Garderen, Veluwe



Chestnut stand, Renkum, Veluwe



bark of a young tree



very old specimen in Kew Gardens, England photos 4x ©Leo Goudzwaard



bark of a mature multi-stemmed Chestnut, Doorwerth, Veluwe



results of Chestnut blight infestation



Sweet chestnut wood photo ©Chris Sonnemans



Thomé, 1885