

Tree factsheet

images at pages 3, 4, 5

***Fagus sylvatica* L.**

taxonomy	
author, year	Linnaeus 1753
synonym	
Family	Fagaceae
Eng. Name	European beech
Dutch name	Beuk, Gewone beuk
subspecies	
varieties	
hybrids	
cultivars, frequently used	'Asplenifolia' - Varenbeuk; parks, avenues 'Atropunicea' - Rode beuk; parks avenues 'Dawyck' - Zuilbeuk - parks, avenues
references	Weeda, 2003. Nederlandse oecologische flora vol.1 (Dutch) Jahn, G. 1987. <i>Fagus sylvatica</i> (in German). in: Schmidt, P. 1987. Nederlandse boomsoorten I, Syllabus Vakgroep Bosbouw Landbouwwuniversiteit Wageningen Plants for a Future Database; www.pfaf.org/index.html
morphology	
crown habit	tree, round
max. height (m)	50
max. dbh (cm)	200-300
actual size Europe	year, d(..) 310, Knole Park, Kent, England year ..., d ..., h 49, Forest de Lyons, France
actual size The Netherlands	year 1800, d(130) 237, h 29, Kasteel Oolde, Laren, Gelderland (Philippona, 2004) year 1850-1860, d(130) 89, h 40 year 1850, d(130) .., h 44, Middachten, De steeg, Gelderland (Goudzwaard, 2006)
old tree Netherlands	Kasteel Oolde, Laren, Gelderland, height 29m, girth 7,8m. at 1,3m; est. 200 years old in 2004
leaf length (cm)	7-12
leaf petiole (cm)	1-2
leaf colour upper surface	green
leaf colour under surface	green
leaves arrangement	alternate
flowering	April
flowering plant	monoecious
flower	monosexual
flower diameter (cm)	1-2
flower male catkins length (cm)	2
pollination	wind
fruit; length	cupule (napje) containing 2 nuts; 2-3 cm
fruit petiole (cm)	2-3
seed; length	nut; 1,5-2,5 cm
seed-wing length (cm)	-
weight 1000 seeds (g)	200-400
seeds ripen	October
seed dispersal	birds (<i>Parus major</i> , koolmees; <i>Sitta europaea</i> , boomklever)
habitat	
natural distribution	Europe
in N.W. Europe since	3000-2000 B.C.
natural areas The Netherlands	forests

geological landscape types The Netherlands (Hoek 1997)	loss-covered terraces, ice pushed ridges, dune area,
forested areas The Netherlands	loamy, clay and sandy soils.
area Netherlands	7749 (2002, Probos)
% of forest trees in the Netherlands	3,0 (2002, Probos)
soil type	
pH-KCl	indifferent
soil fertility	nutrient medium to rich
light	highly shade tolerant
①shade tolerance (0=no tolerance to 5=max. tolerance)	4.6
①drought tolerance (0=no tolerance to 5=max. tolerance)	2.4
①waterlogging tolerance (0=no tolerance to 5=max. tolerance)	1.0
plant communities in the Netherlands	Klasse der Eiken-beukenbossen op voedselarme grond: -Fago-Quercetum - Beuken-eikenbos -Deschampsio-Fagetum - Bochtige smele-beukenbos Klasse der Eiken-beukenbossen op voedselarme grond: -Luzulo luzuloidis-Fagetum - Veldbies-beukenbos -Violo odoratae-Ulmetum -Abelen-iepenbos -Fraxino-ulmetum - Essen-iepenbos -Pruno-fraxinetum -Vogelkers-essenbos
management	
status Europe	frequent indigenous species in forests
status The Netherlands	frequent indigenous species in forests and urban environment
application	timber tree, street tree
propagation	seed; named cultivars by grafting
regeneration	planting; natural regeneration from seed
optimal gap size for regeneration	1-2x tree length
first plantation Netherlands	
resprouting after cutting	moderate
growth rate (M.A.I. in m ³ ha ⁻¹ J ⁻¹)	moderate: 4-12
diseases	<i>Nectria cinnabarina</i> – fungus on wood (Meniezwammetje) <i>Nectria ditissima</i> – fungus on bark (Bastkanker) <i>Meripilus giganteus</i> - Reuzenzwam
insects	<i>Phyllaphis fagi</i> – beukenbladluis <i>Cryptococcus fagisuga</i> – wollige beukenstamluis <i>Rhynchaenus fagi</i> - beukenspringkever
wood	
wood	beech (Dutch: Beuken)
wood structures key characteristics of pores	diffuse porous. very large rays
vol. mass heartwood (kg/m ³)	(690-) 710 (-750) (12% moisture content)
elastic modulus (N/mm ²)	12.300
durability heartwood	fungus 5
heartwood color	white to light brown
sapwood color	white to light brown
contents	
products	furniture, tools, flooring, cutlery, turnery
non-timber products	
fruits	roasted or cooked edible

①Ülo Niinemets and Fernando Valladares. 2006. Tolerance to shade, drought, and waterlogging of temperate Northern Hemisphere trees and shrubs. Ecological Monographs 76:521–547



Young beech trees in Ede Forest



Mature ornamental beech in Doorwerth



400 years old trees in New Forest woodland (GB)



Magnificent beech showing its roots on an eroded hill, Barneveld, Veluwe



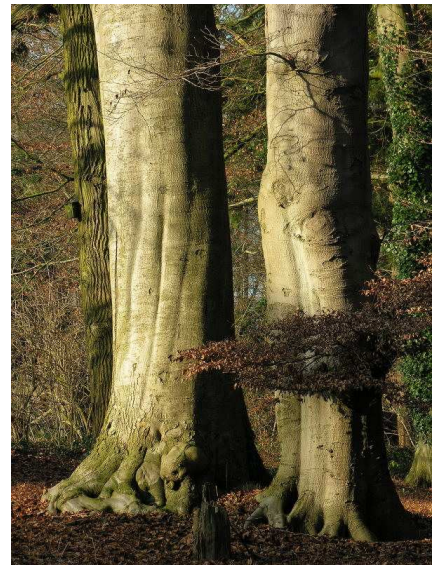
Leaves, hairy at the periphery



Flowers, one female flower upright and male flowers pendulant



Fruit, containing 2 seeds (photo Wikipedia)wood ©Chris Sonnemans



Old trunks near Doorwerth, Veluwe



Twig in winter



Seedling emerging from the forest floor in springtime



Freshly cut logs

Photography 3x © Leo Goudzwaard, Wageningen University