

## Tree factsheet

images at pages 3, 4, 5

### *Betula pendula* Roth.

<b>taxonomy</b>	
author, year	Roth <b>year</b>
synonym	<i>B. verrucosa</i> Ehrh. <i>B. alba</i> L.
Family	Betulaceae
Eng. Name	Silver birch, (European) White Birch
Dutch name	Ruwe berk
subspecies	-
varieties	<i>B. pendula</i> var <i>carelica</i> (OECD, 2003)
hybrids	<i>B. x aurata</i> ( <i>B. pendula</i> x <i>B. pubescens</i> ) rare in nature <i>B. pendula</i> x <i>B. humilis</i> <i>B. pendula</i> x <i>B. japonica</i>
cultivars, frequently planted: (7e rassenlijst Bomen)	
'Laciniata'	street and park tree
'Tristis'	park tree
<b>references</b>	
	Weeda, 2003, vol.1 (Dutch)
	OECD, 2003. Concensus document on the biology of European White Birch (online document). Series on Harmonisation of Regulatory Oversight in Biotechnology, No. 28
	Schoenmakers, A.L.. 1987. De Berk (in Dutch). in: Schmidt, P. 1987. Nederlandse boomsoorten I, Syllabus Vakgroep Bosbouw Landbouwniversiteit Wageningen
	Plants for a Future Database; <a href="http://www.pfaf.org/index.html">www.pfaf.org/index.html</a>
<b>morphology</b>	
crown habit	tree, oval
max. height (m)	20
max. dbh (cm)	>100
actual size Great Britain	year ..., d(20) 127, Penhurst, Kent, England
actual size The Netherlands	year 1890-1900, d(130) 38, h ... year 1930-1940, d(130) 57, h 15 (there are bigger ones)
leaf length (cm)	3-6
leaf petiole (cm)	1,5 – 2,5
leaf colour upper surface	green
leaf colour under surface	green
leaves arrangement	alternate
flowering	April
flowering plant	monoecious
flower	monosexual
flower diameter (cm)	< 0,1
flower male catkins length (cm)	3-8
pollination	wind
fruit; length	samara; 0,2-0,3 cm
fruit petiole (cm)	1
seed; length	nut; 0,2 cm
seed-wing length (cm)	0,2-0,3
weight 1000 seeds (g)	0,5-0,7
seeds ripen	July
seed dispersal	wind

<b>habitat</b>	
natural distribution	Europe
in N.W. Europe since	15.000 B.C.
natural areas The Netherlands	forests, dry heathland
geological landscape types The Netherlands (Hoek 1997)	dune area, loss-covered terraces, till plateau, ice pushed ridges, coversand area, drift sand area
forested areas The Netherlands	natural, sandy and loamy soils.
area Netherlands	<i>Betula</i> spp. 9736 (2002, Probos)
% of forest trees in the Netherlands	3,7 (2002, Probos)
soil type	
pH-KCl	indifferent
soil fertility	nutrient poor
light	light demanding
① shade tolerance (0=no tolerance to 5=max. tolerance)	2.0
① drought tolerance (0=no tolerance to 5=max. tolerance)	1.9
① waterlogging tolerance (0=no tolerance to 5=max. tolerance)	1.7
plant communities in the Netherlands	<p><i>Quercetea robori-petraea</i> (klasse der Eiken-Beukenbossen op voedselarme grond)</p> <ul style="list-style-type: none"> <li>-<i>Leucobryo-Pinetum</i> (Kussentjesmos-Dennenbos)</li> <li>-<i>Betulo-Quercetum roboris</i> (Berken-Eikenbos)</li> <li>-<i>Fago-Quercetum</i> (Beuken-Eikenbos)</li> <li>-<i>Luzulo luzuloides-Fagetum</i> (Veldbies-Beukenbos)</li> </ul> <p><i>Vaccinio-Piceetea</i> (klasse der naaldbossen):</p> <ul style="list-style-type: none"> <li>-<i>Dicrano-Juniperetum</i> (Gaffeltandmos-Jeneverbesstruweel)</li> <li>-<i>Leucobryo-Pinetum</i> (Kussentjesmos-Dennenbos)</li> </ul> <p><i>Querco-Fagetea</i> (klasse der Eiken-Beukenbossen op voedselrijke grond):</p> <ul style="list-style-type: none"> <li>-<i>Crataego-Betuletum pubescentis</i> (Meidoorn-Berkenbos)</li> </ul>
<b>management</b>	
status Europe	frequent, indigenous species in forests, landscape and urban environment
status The Netherlands	frequent, indigenous species in forests, landscape and urban environment
application	timber tree, nature tree, street tree, ornamental
propagation	seed; named cultivars by grafting, cuttings, budding, tissue culture
regeneration	planting; natural regeneration from seed
optimal gap size for regeneration	2-3x tree length
first plantation Netherlands	
resprouting after cutting	good (but failing in feb-march)
growth rate (M.A.I. in $m^3ha^{-1}j^{-1}$ )	moderate, 3-6 (can be much higher using improved trees (OECD 2003))
diseases	<i>Melampsorium betulinum</i> – leaf fungus (Bladroest) <i>Piptoporus betulinus</i> – parasite on weakened Birches (Berkendoder)
insects	aphids
<b>wood</b>	
wood	European birch, White birch (Europees berken)
wood structures key characteristics of pores	diffuse porous. Sparsely scattered radial rows of pores.
vol. mass heartwood ( $kg/m^3$ )	(564-)660(-670) (12% moisture content)
elastic modulus ( $N/mm^2$ )	14.200
durability heartwood	fungus 5
heartwood color	white to light-brown
sapwood color	white to light-brown
contents	
products	furniture, cladding, flooring, tools, cutlery, turnery, veneerwood, triplex
<b>non-timber products</b>	
sap	medicinal; beer (Dutch: berkenbier)

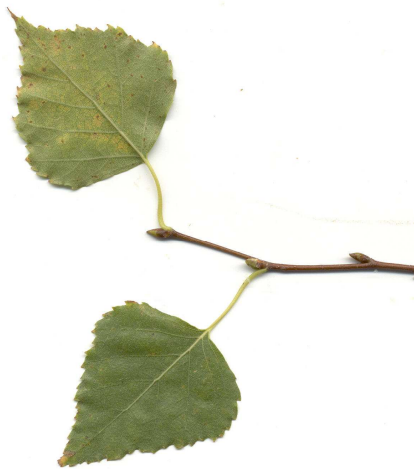
① Ülo Niinemets and Fernando Valladares. 2006. Tolerance to shade, drought, and waterlogging of temperate Northern Hemisphere trees and shrubs. Ecological Monographs 76:521–547



young tree, Wageningen



mature tree, Wageningen



leaves



winter twig



female (left) and male (right) flowers

photography 5x© Leo Goudzwaard, Wageningen University



bark of a young tree



bark of a mature tree



Silver birch seedlings

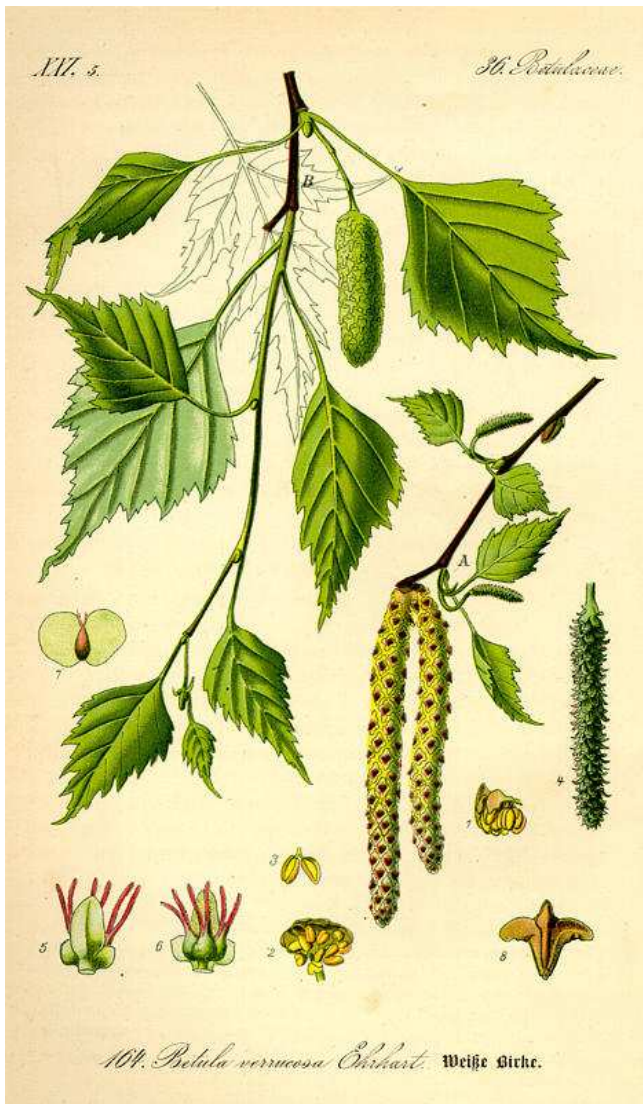
photography 4x © Leo Goudzwaard



*Piptoporus betulinus* (Berkendoder)



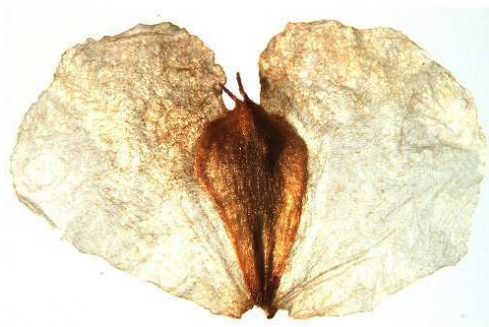
Birch wood, photo ©Chris Sonnemans



Thomé, 1885



fruit bract



seed