

**Tree factsheet**

images at pages 3 and 4

***Picea sitchensis* (Bongard) Carriere**

<b>taxonomy</b>	
author, year	Carriere, 1855
synonym	<i>Pinus sitchensis</i> Bongard 1832
Family	Pinaceae
Eng. Name	Silver spruce, menzies spruce, coast spruce
Dutch name	Sitkaspar, Sitka
subspecies	-
varieties	<i>P. abies</i> var <i>acuminata</i>
hybrids	<i>P. x lutzii</i> ( <i>P. sitchensis</i> x <i>P. glauca</i> ) <i>P. sitchensis</i> x <i>P. engelmannii</i>
cultivars, frequently planted	-
<b>references</b>	Earle, C.J. Gymnosperm database <a href="http://www.conifers.org">www.conifers.org</a> USDA Forest Service <a href="http://www.fs.fed.us/database/feis/plants/tree/index.html">http://www.fs.fed.us/database/feis/plants/tree/index.html</a> OECD, 2002. Concensus document on the biology of <i>Picea sitchensis</i> (online document) Series on Harmonisation of Regulatory Oversight in Biotechnology, No. 21 Plants for a Future Database; <a href="http://www.pfaf.org/index.html">www.pfaf.org/index.html</a>
<b>morphology</b>	
crown habit	conic to pyramidal
max. height (m)	North America: 80 The Netherlands: 30
max. dbh (cm)	500
highest tree	year..., h 96.7, Prairie Creek Redwoods State Park, California, USA year ..., d(130) 572, h 58.2, Lake Quinault, Olympic National Forest, WA, USA
actual size Europe	year 1832, d(...) 249, h 44.8, Fairburn House, Contin, Highland, Scotland
actual size Netherlands	year 1900, d(130) ..., h ..., Schovenhorst, Putten, Gelderland
leaf length (cm)	1,5-2,5 single
leaf petiole (cm)	<0,1
leaf colour upper surface	green
leaf colour under surface	grey with stomatal bands
leaves arrangement	alternate
flowering	May
flowering plant	monoecious
flower	monosexual
flower diameter (cm)	inconspicuous
pollination	wind
fruit; length	cone; 5-8 cm
fruit petiole (cm)	0,2
seed; length	samara (=winged nut); 0,2-0,4 cm
seed-wing length (cm)	1
weight 1000 seeds (g)	1,7 – 2,5
seeds ripen	August-September same year
seed dispersal	wind

<b>habitat</b>	
natural distribution	W. N. America
in N.W. Europe since	1831, Engeland
natural areas The Netherlands	not indigenous
geological landscape types The Netherlands (Hoek 1997)	coversand area, ice-pushed ridges
forested areas The Netherlands	sandy soils; former heath fields
area Netherlands	<1.000 ha (2002, Probos)
% of forest trees in the Netherlands	<0,5 (2002, Probos)
soil type	sandy, loamy, and peat
pH-KCl	4-6
soil fertility	medium to nutrient rich
light	shade tolerant
① shade tolerance (0=no tolerance to 5=max. tolerance)	3.9
① drought tolerance (0=no tolerance to 5=max. tolerance)	1.5
① waterlogging tolerance (0=no tolerance to 5=max. tolerance)	2.0
plant communities in the Netherlands	-
<b>management</b>	
status N. America	frequent species in forests
status Europe	infrequent, locally frequent, exotic species in forests
status	infrequent exotic species in forests
application	timber tree
propagation	seed
regeneration	planting
optimal gap size for regeneration	1-2x tree length
first plantation Netherlands	approx. 1930
resprouting after cutting	no
growth rate (M.A.I. in $m^3ha^{-1}j^{-1}$ )	fast; 6-16
diseases	<i>Heterobasidion annosum</i> , fungus on roots (Wortelzwam) <i>Rhizina undulata</i> , fungus on roots (Koffievuurtjeszwam)
insects	
<b>wood</b>	as <i>P. abies</i>
wood	European spruce (Vuren)
wood structures key characteristics of pores	Resin canals. Continous transition from earlywood to latewood
density heartwood ( $kg/m^3$ )	400-450 (12% moisture content)
elastic modulus ( $N/mm^2$ )	
durability heartwood	fungus 4
heartwood colour	white
sapwood colour	white
contents	resin (hars)
products	construction timber, cladding, pulpwood for paper, packing-wood, boat masts resonance boxes for musical instruments
<b>non-timber products</b>	
seeds	raw edible
resin	for turpentine and pitch (Plants For A Future database)

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



saplings growing at a moulded tree trunk, Amerongen Forest Reserve



crown of a solitary Silver spruce, Bennekom



Silvery colored very sharp needles and mature cones



needles in detail





bark

photos 5x ©Leo Goudzwaard, Wageningen University