

**Tree factsheet**

images at pages 3 and 4

***Abies alba* Miller**

<b>taxonomy</b>	
author, year	Miller, 1768
synonym	<i>Abies pectinata</i> DC <i>Abies pardei</i> Gaussen
Family	Pinaceae
Eng. Name	European silver fir, Common silver fir
Dutch name	Gewone zilverspar (Heukels' Flora, 2005) Zilverspar (Boom, 2000)
subspecies	-
varieties	-
hybrids	-
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.pfaf.org/database/index.php">www.pfaf.org/database/index.php</a> Rolland, C. 1993. Tree-ring and climate relationships for <i>Abies alba</i> in the Alps Tree-ring bulletin 53:1-11. Available online at <a href="http://www.treeringsociety.org">www.treeringsociety.org</a> Schmidt, P. 1989. <i>Abies alba</i> en <i>Abies grandis</i> (in Dutch). in: Schmidt, P. 1989. Nederlandse boomsoorten II, Syllabus Vakgroep Bosbouw Landbouwniversiteit Wageningen.
<b>morphology</b>	
crown habit	pyramidal
max. height (m)	Europe: 45-55 The Netherlands: 20-30
max. dbh (cm)	200 or more
actual size Europe	year ... , d(130)> 320, h 59 at Karpatsky National Reserve (Ukraine?)
actual sizes Great Britain	year ....., d(130) 296, h 45 at Strone house, Strathclyde year ....., d(130) 201, h 50 at Raehills, Dumfries & Galloway
oldest tree Europe	411 years in 1952, Bayerischer Wald, Germany
oldest tree Netherlands	year 1900, Schovenhorst, Putten
leaf length (cm)	1-3 single
leaf petiole (cm)	0
leaf colour upper surface	green
leaf colour under surface	grey with stomatal bands
leaves arrangement	alternate
flowering	May-June
flowering plant	monoecious
flower	monosexual
flower diameter pollen cones (cm)	1-3
pollination	wind
fruit; length	cone; 10-15 cm
fruit petiole (cm)	0,2
seed; length	samara (=winged nut); 2,5 cm
seed-wing length (cm)	....
weight 1000 seeds (g)	18-36 (Ned. Boschbouwvereniging, 1946) / 43-45 (Boeijink, 1995)
seeds ripen	September-October same year
seed dispersal	wind

<b>habitat</b>	
natural distribution	Mid and South Europe
in N.W. Europe since	1603 in U.K. cultivated
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	<1700 ha (2002, Probos)
area natural area	-
% of forest trees in the Netherlands	<0,7 (2002, Probos)
pH-KCl	4,5-5 (4-7)
soil type	
soil fertility	medium to nutrient rich
light	highly shade tolerant
① shade tolerance (0=no tolerance to 5=max. tolerance)	4.6
① drought tolerance (0=no tolerance to 5=max. tolerance)	1.8
① waterlogging tolerance (0=no tolerance to 5=max. tolerance)	1.0
plant communities in the Netherlands	Vaccinio-Piceetea (klasse der naaldbossen)
<b>management</b>	
status Europe, natural range	frequent indigenous species in forests
status The Netherlands	rare exotic species, mainly in botanical gardens and forest estates
application	timber tree
propagation	seed
regeneration	planting, natural regeneration
optimal gap size for regeneration	< 1 x tree length
first plantation Netherlands	
resprouting after cutting	yes, but not always successful
growth rate (M.A.I. in m <sup>3</sup> ha <sup>-1</sup> j <sup>-1</sup> )	
diseases	<i>Melampsonella caryophyllaceanum</i> , cancer on buds (Dutch: kanker die heksenbezems vormt)
insects	<i>Dreyfusia nordmanniana</i> , woolly aphid (Dutch: wolluis)
<b>wood</b>	
wood	Fir, Silver Fir (Dutch: Dennen)
wood structures key characteristics of pores	Tracheids. No resin canals. Rays without tracheids
density heartwood (kg/m <sup>3</sup> )	(350-)450(-550)
elastic modulus (N/mm <sup>2</sup> )	10.800
durability heartwood	fungus 4
heartwood colour	yellowish to grey-white
sapwood colour	yellowish to grey-white
contents	no resin in the wood, but bark has resin blisters
products	construction timber, cladding, pulpwood for paper, resonance boxes for musical instruments
<b>non-timber products</b>	
seeds	raw edible
essential oil	from foliage

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



Old specimen in Montenegro, Mount Orjen (Wikipedia)



branch



leaves and buds



seedling of *Abies* spec. Schovenhorst Pinetum  
(photo © Leo Goudzwaard, Wageningen University)



seedlings (Gil Wojciech, Polish Forest Research Institute,  
[www.forestryimages.org](http://www.forestryimages.org))



Thomé, 1885



Bark of a young tree, Hinkeloord Arboretum, Wageningen photo ©Leo Goudzwaard Wageningen University