

Tree factsheet

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***Tsuga heterophylla* (Rafinesque) Sargent**

taxonomy	
author, year	Sargent, 1898
synonym	<i>Abies heterophylla</i> Raffinesque
Family	Pinaceae
Eng. Name	Western hemlock,
Dutch name	Westelijke hemlockspaar (Heukels' Flora 2005) Westerse hemlock (Boom 2000 Nederlandse dendrologie) Scheerlingsden
subspecies	-
varieties	-
hybrids	-
cultivars, frequently planted	-
references	Earle, C.J. Gymnosperm database www.conifers.org USDA Forest Service www.fs.fed.us/database/feis/plants/tree/index.php Plants for a Future Database; www.pfaf.org/index.html
morphology	
crown habit	pyramidal
max. height (m)	In the Netherlands: 30 (40?) in Europe: ? in USA: 60 (75)
max. dbh (cm)	200 (USA)
actual size USA/Canada	year ..., d(130) 259, h 55, Quisitis Point, Pacific Rim National Park, BC year ..., d(130) 218, h 73, Olympic National Park, Washington year ..., d(130) 140, h 79, Prairie Creek Redwood State Park, CA oldest 1238 rings (year 1998) in the Caren Range, BC
actual size Europe	?
actual size Netherlands	year 1900,, Pinetum Schovenhorst, Putten, Gelderland
leaf length (cm)	1-2 single
leaf petiole (cm)	0,5-1
leaf colour upper surface	green
leaf colour under surface	grey stomata bands
leaves arrangement	alternate
flowering	April-May
flowering plant	monoecious
flower	monosexual
flower diameter (cm)	inconspicuous
pollination	wind
fruit; length	cone; 2-2,5 cm
fruit petiole (cm)	0
seed; length	samara (=winged nut); 0,2-0,3 cm
seed-wing length (cm)	0,4-0,6
weight 1000 seeds (g)	1,6
seeds ripen	October-December same year
seed dispersal	wind

habitat	
natural distribution	West North America
in N.W. Europe since	?
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	<1200 ha (2002, Probos)
% of forest trees in the Netherlands	<0,5 (2002, Probos)
soil type	sandy, loamy and clay soils
pH-KCl	4-7
soil fertility	medium to nutrient rich
light	highly shade tolerant
① shade tolerance (0=no tolerance to 5=max. tolerance)	5.0
① drought tolerance (0=no tolerance to 5=max. tolerance)	1.2
① waterlogging tolerance (0=no tolerance to 5=max. tolerance)	1.0
plant communities in the Netherlands	Vaccinio-Piceetea (klasse der naaldbossen): -Leucobryo-Pinetum – Kussentjesmos-Dennenbos
management	
status USA	locally frequent species in forests
status Europe	infrequent exotic species in forests
status The Netherlands	frequent exotic species in forests
application	timber tree
propagation	seed
regeneration	planting; natural regeneration
optimal gap size for regeneration	1-2x tree length
first plantation Netherlands	?
resprouting after cutting	no
growth rate (M.A.I. in $m^3ha^{-1}j^{-1}$)	fast;
diseases	<i>Heterobasidion annosum</i> – Wortelzwam <i>Armillaria mellea</i> - Honingzwam
insects	-
wood	
wood	Western hemlock, West coast hemlock, British Columbia hemlock, Prince Albert fir, Alaska pine, Pacific hemlock (Dutch: hemlock)
wood structures key characteristics of pores	?
density heartwood (kg/m^3)	450 (12% moisture content)
elastic modulus (N/mm^2)	12.300
durability heartwood	fungus 4
heartwood colour	white to light yellowish brown
sapwood colour	white to light yellowish brown
contents	no resin (Dutch: hars)
products	excellent firewood, construction timber, cladding, pulpwood, veneerwood
non-timber products	
inner bark	dried and grounded into farina powder as an emergency food

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



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