

Tree factsheet

images at pages 3 and 4

***Alnus incana* (L.) Moench**

taxonomy	
author, year	Mönch, 1794
synonym	-
Family	Betulaceae
Eng. Name	Grey alder
Dutch name	Witte els, Grauwe els
subspecies	<i>Alnus incana</i> subsp. <i>incana</i> Grey Alder – N. Europe, N.W. Asia, C. and S. Europe in mountains <i>Alnus incana</i> subsp. <i>hirsuta</i> (<i>A. hirsuta</i>) Manchurian Alder. N.E. Asia and C. Asia in mountains. <i>Alnus incana</i> subsp. <i>kolaensis</i> . Subarctic N.E. Europe. <i>Alnus incana</i> subsp. <i>oblongifolia</i> (<i>A. oblongifolia</i>) Arizona Alder). S.W. North America. <i>Alnus incana</i> subsp. <i>rugosa</i> (<i>A. rugosa</i>) Speckled Alder. N.E. North America. <i>Alnus incana</i> subsp. <i>tenuifolia</i> (<i>A. tenuifolia</i>) Thinleaf Alder or Mountain Alder) N.W. North America
varieties	-
hybrids	<i>A. x pubescens</i> Tausch (<i>A. glutinosa</i> x <i>A. incana</i>)
cultivars, frequently used:	
'Aurea'	Goudels, yellow leaves, used as a park and street tree
'Laciniata'	incised leaves and smaller cones
references	
	Weeda, 2003, vol.1 (Dutch)
	Wieggers, J. 1989. <i>Alnus</i> (in Dutch). in: Schmidt, P. 1989. <i>Nederlandse boomsoorten II</i> , Syllabus Vakgroep Bosbouw Landbouwwuniversiteit Wageningen
	Plants for a Future Database; www.pfaf.org/index.html
morphology	
crown habit	tree, oval
max. height (m)	20
max. dbh (cm)	>100
actual size The Netherlands	year 1920-1930, d(130) 88, h 13
leaf length (cm)	5-11
leaf petiole (cm)	2
leaf colour upper surface	green
leaf colour under surface	grey-green
leaves arrangement	alternate
flowering	February-March
flowering plant	monoecious
flower	monosexual
flower diameter (cm)	<0,1
pollination	wind
fruit; length	cone; 1-1,5 cm
fruit petiole (cm)	1
seed; length	nut; approx. 0,1 cm
seed-wing length (cm)	approx. 0,1
weight 1000 seeds (g)	0,7-0,8
seeds ripen	October
seed dispersal	wind, water

habitat	
natural distribution	Europe
in N.W. Europe since	no archeobotanic finds
natural areas The Netherlands	Elzenbronbossen
geological landscape types The Netherlands (Hoek 1997)	coversand area, river valleys
forested areas The Netherlands	sandy soils
area Netherlands (ha)	Alnus spp. 967 (2002, Probos)
% of forest trees in the Netherlands	0,4 (2002, Probos)
soil type	
pH	neutral to alkaline
soil fertility	nutrient poor to rich
light	half shade tolerant
① shade tolerance (0=no tolerance to 5=max. tolerance)	2.3
① drought tolerance (0=no tolerance to 5=max. tolerance)	1.9
① waterlogging tolerance (0=no tolerance to 5=max. tolerance)	2.8
plant communities in the Netherlands	Querco-Fagetea (klasse der Eiken-Beukenbossen op voedselrijke grond): Alno-Padion (Verbond van Els en Vogelkers)
management	
status Europe	infrequent species in forests, landscape
status The Netherlands	rare, indigenous species in forests; infrequent in landscape
application	nature tree
propagation	seed; named cultivars by grafting or cuttings
regeneration	planting; natural regeneration from seed; uprootings
optimal gap size for regeneration	2-3x tree length
first plantation Netherlands	
resprouting after cutting	good
growth rate (M.A.I. in $m^3ha^{-1}j^{-1}$)	
diseases	
insects	
wood	
wood	Alder, Grey alder (Europees elzen)
wood structures key characteristics of pores	diffuse porous; radial pore groups
vol. mass heartwood (kg/m ³)	
elastic modulus (N/mm ²)	
durability heartwood	fungus 5
heartwood color	red-brown
sapwood color	red-brown
contents	
products	
non-timber products	
bark	medicinal purposes

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



leaves and flower buds



flowering tree top



leaf under surface is grayish green
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flowering tree, Rhenen



female flowers



ripe fruits



male flowers, detail

photography 3x ©Plantengids KU Leuven



winged nut

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bark of a young tree

photography 2x ©Leo Goudzwaard, Wageningen University



bark of a mature tree