



PLANNING TIPS
TREES AND
SHRUBS



Planning tips Trees and Shrubs Overview

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Why planning tips?

Our planning tips list the trees and shrubs according to their properties. For all kind of planting projects, there are plants that are best suited for certain purposes and requirements and other, that may not fulfil their intended tasks. When selecting your range of plants according to given criteria, you can either study the individual descriptions from A to Z, or just make a preselection of suitable species and varieties by using the catalogue of criteria from the planning tips which helps you to save time.

Please be aware that the trees and shrubs listed represent a concentrate. They serve as a memory aid and are intended to provide an overview of the plants in question. Decades of nursery experience, the knowledge of expert colleagues as well as the expertise of the author can be a guide for making up your choice of plants, nevertheless, they cannot compensate for personal experience, and they do not replace your own sense of aesthetics or ecological sensitivity.

As living beings, plants follow their own rules. Any information or statement within this list is an attempt to classify the life expressions of plants in a modern way.

There might be variations in size, habit, flowering times, location requirements, strengths or weaknesses as well as the special characteristics of the plants.



Many of them have therefore been included within these lists in several groups in order to respect the frequent transitions that may occur, and above all to remind us that there are more possible uses than it is generally assumed.





1 Groups according to size and growth rates

Though plants grow according to their species, they vary within certain limits depending on whether conditions are minimal or optimal. In addition, habit sizes are greatly influenced by the climatic region. Note: In order to be able to take account of all the various plant forms, border cases were included in all categories wherever they may occur.

Categorisation of Deciduous plants und Conifers

- | | |
|---|------------|
| 1. Large trees | 20-40 m |
| 2. Medium-size trees | 12/15-20 m |
| 3. Small trees | 7-12/15 m |
| 4. Large shrubs | 3-5/7 m |
| 5. Normal shrubs / medium shrubs | 1.5-3 m |
| 6. Small shrubs | 0.5-1.5 m |
| 7. Dwarf shrubs | 0.1-0.5 m |
| 8. Semi-shrubs (base lignified, shoots not) | |

Note: In order to take into account the different manifestations of woody plants, borderline cases have been listed in all categories.

Deciduous plants

Genus/species/variety	Height	Width
1. Large trees (20-40 m)		
Acer platanoides	20 to 30 m	8 to 15 m
Acer pseudoplatanus	20 to 40 m	12 to 20 m
Acer pseudoplatanus 'Erectum'	15 to 25 m	6 to 10 m
Acer pseudoplatanus 'Negenia'	20 to 30 m	6 to 10 m
Acer saccharinum	20 to 30 m	15 to 20 m
Acer saccharum	15 to 25 m	10 to 14 m
Aesculus hippocastanum	20 to 25 m	12 to 15 m
Ailanthus altissima	18 to 25 m	8 to 15 m
Alnus glutinosa	8 to 30 m	8 to 10 m
Betula papyrifera	18 to 30 m	0 to 18 m
Betula pendula	8 to 30 m	6 to 8 m
Betula pendula 'Tristis'	8 to 30 m	6 to 8 m
Castanea sativa	10 to 35 m	10 to 20 m
Celtis australis	10 to 25 m	8 to 10 m
Fagus sylvatica 'Riversii'	25 to 30 m	10 to 15 m
Fagus sylvatica 'Atropunicea'	25 to 40 m	10 to 25 m
Fagus sylvatica	25 to 40 m	10 to 25 m
Fraxinus excelsior	20 to 40 m	10 to 25 m
Fraxinus excelsior 'Altena'	20 to 30 m	10 to 15 m
Fraxinus excelsior 'Westhof's Glorie'	20 to 40 m	8 to 12 m
Gleditsia triacanthos	15 to 25 m	8 to 10 m
Gleditsia triacanthos inermis	15 to 25 m	8 to 10 m
Juglans cinerea	18 to 25 m	8 to 10 m
Juglans nigra	20 to 30 m	20 to 30 m
Liriodendron tulipifera	25 to 35 m	12 to 20 m

Genus/species/variety	Height	Width
Liquidambar styraciflua 'Moraine'	10 to 25 m	6 to 10 m
Platanus acerifolia	25 to 30 m	15 to 25 m
Platanus acerifolia 'Tremonia'	15 to 30 m	15 to 25 m
Platanus orientalis	25 to 35 m	15 to 20 m
Populus alba 'Nivea'	20 to 35 m	12 to 20 m
Populus balsamifera	10 to 25 m	8 to 12 m
Populus berolinensis	20 to 25 m	8 to 10 m
Populus canadensis 'Robusta'	30 to 35 m	12 to 15 m
Populus canescens	20 to 25 m	15 to 20 m
Populus nigra	20 to 30 m	15 to 20 m
Populus nigra 'Italica'	25 to 30 m	2 to 5 m
Pseudotsuga menziesii caesia	30 to 40 m	7 to 10 m
Quercus alba	20 to 25 m	15 to 25 m
Quercus cerris	20 to 30 m	8 to 15 m
Quercus frainetto	20 to 30 m	10 to 15 m
Quercus petraea	20 to 40 m	15 to 20 m
Quercus robur	30 to 40 m	15 to 25 m
Quercus rubra	20 to 30 m	10 to 15 m
Robinia pseudoacacia	15 to 20 m	7 to 12 m
Robinia pseudoacacia 'Sandraudiga'	15 to 25 m	8 to 12 m
Robinia pseudoacacia 'Semperflorens'	20 to 25 m	8 to 12 m
Salix alba	10 to 20 m	8 to 15 m
Salix alba 'Liempde'	25 to 40 m	8 to 10 m
Tilia cordata	20 to 30 m	10 to 20 m
Tilia europaea	25 to 40 m	10 to 15 m
Tilia europaea 'Pallida'	30 to 40 m	10 to 15 m
Tilia henryana	9 to 25 m	8 to 10 m
Tilia platyphyllos	30 to 40 m	15 to 25 m
Tilia platyphyllos 'Rubra'	30 to 40 m	15 to 20 m
Tilia tomentosa	25 to 30 m	15 to 20 m
Tilia tomentosa 'Brabant'	20 to 25 m	12 to 15 m
Ulmus carpinifolia	25 to 30 m	12 to 15 m
Ulmus glabra	30 to 40 m	15 to 20 m
Ulmus laevis	15 to 25 m	12 to 15 m

2. Medium-size trees (12 / 15-20 m)

Acer campestre	3 to 20 m	5 to 12 m
Acer campestre 'Elsrijk'	8 to 12 m	4 to 6 m
Acer cappadocicum	10 to 20 m	8 to 10 m
Acer freemanii 'Armstrong'	10 to 15 m	2 to 4 m
Acer freemanii 'Autumn Blaze'	15 to 20 m	10 to 12 m
Acer negundo varieties	10 to 20 m	5 to 10 m
Acer platanoides varieties	10 to 15 m	6 to 12 m
Acer rubrum	7 to 12 m	4 to 7 m
Acer saccharinum 'Pyramidale'	15 to 20 m	6 to 8 m
Acer saccharinum 'Wieri'	12 to 20 m	8 to 15 m
Acer truncatum 'Pacific Sunset®'	8 to 12 m	4 to 6 m
Aesculus flava 'Vestita'	15 to 20 m	8 to 15 m
Aesculus hippocastanum 'Baumannii'	18 to 20 m	8 to 12 m
Aesculus hippocastanum 'Pyramidalis'	12 to 15 m	6 to 8 m





Groups according to size and growth rates 1

Genus/species/variety	Height	Width
<i>Alnus cordata</i>	8 to 15 m	3 to 6 m
<i>Alnus incana</i>	8 to 20 m	3 to 10 m
<i>Alnus spaethii</i>	12 to 15 m	6 to 10 m
<i>Betula ermanii</i>	15 to 20 m	6 to 10 m
<i>Betula maximowicziana</i>	15 to 20 m	8 to 12 m
<i>Betula nigra</i>	15 to 20 m	6 to 12 m
<i>Betula pendula</i>	8 to 30 m	6 to 8 m
<i>Betula pendula</i> 'Tristis'	8 to 30 m	6 to 8 m
<i>Betula pubescens</i>	5 to 15 m	3 to 5 m
<i>Betula jacquemontii</i>	10 to 15 m	6 to 10 m
<i>Carpinus betulus</i>	5 to 15 m	4 to 8 m
<i>Carpinus betulus</i> 'Fastigiata'	10 to 15 m	5 to 8 m
<i>Cercidiphyllum japonicum</i>	8 to 15 m	4 to 10 m
<i>Cladrastis kentukea</i>	10 to 15 m	5 to 8 m
<i>Corylus colurna</i>	12 to 20 m	6 to 8 m
<i>Davidia involucrata</i> vilmoriniana	6 to 15 m	4 to 8 m
<i>Euodia hupehensis</i>	6 to 12 m	6 to 12 m
<i>Fagus sylvatica</i> 'Asplenifolia'	15 to 20 m	8 to 12 m
<i>Fagus sylvatica</i> 'Pendula'	15 to 20 m	10 to 20 m
<i>Fagus sylvatica</i> 'Purpurea Pendula'	8 to 10 m	4 to 6 m
<i>Fraxinus americana</i> 'Autumn Purple'	12 to 15 m	10 to 12 m
<i>Fraxinus americana</i> 'Skyline'	10 to 15 m	6 to 10 m
<i>Fraxinus americana</i> microcarpa	12 to 15 m	8 to 10 m
<i>Fraxinus angustifolia</i> 'Raywood'	15 to 20 m	7 to 10 m
<i>Fraxinus excelsior</i> 'Diversifolia'	15 to 20 m	8 to 10 m
<i>Fraxinus excelsior</i> 'Geesink'	15 to 20 m	10 to 15 m
<i>Fraxinus pennsylvanica</i> 'Cimzam'	15 to 20 m	8 to 10 m
<i>Fraxinus pennsylvanica</i> 'Patmore'	15 to 20 m	10 to 12 m
<i>Fraxinus pennsylvanica</i> 'Summit'	15 to 18 m	2 to 3 m
<i>Gleditsia triacanthos</i> 'Skyline'	12 to 15 m	5 to 8 m
<i>Gymnocladus dioica</i>	15 to 20 m	8 to 15 m
<i>Juglans regia</i>	10 to 20 m	8 to 15 m
<i>Liquidambar styraciflua</i>	12 to 20 m	4 to 8 m
<i>Liriodendron tulipifera</i> 'Fastigiatum'	15 to 20 m	5 to 7 m
<i>Nyssa sylvatica</i>	15 to 20 m	8 to 12 m
<i>Ostrya carpinifolia</i>	10 to 15 m	8 to 12 m
<i>Paulownia tomentosa</i>	8 to 15 m	8 to 15 m
<i>Phellodendron amurense</i>	10 to 12 m	10 to 15 m
<i>Populus lasiocarpa</i>	10 to 15 m	6 to 10 m
<i>Populus simonii</i>	12 to 18 m	6 to 10 m
<i>Populus tremula</i>	10 to 30 m	6 to 10 m
<i>Populus tremula</i> 'Erecta'	10 to 18 m	1 to 2 m
<i>Prunus avium</i>	15 to 20 m	8 to 12 m
<i>Pterocarya fraxinifolia</i>	15 to 25 m	8 to 25 m
<i>Pyrus calleryana</i> 'Bradford'	8 to 15 m	6 to 9 m
<i>Pyrus calleryana</i> 'Chanticleer'	7 to 12 m	4 to 5 m
<i>Pyrus communis</i>	5 to 15 m	5 to 10 m
<i>Quercus coccinea</i>	15 to 25 m	8 to 15 m
<i>Quercus macranthera</i>	10 to 20 m	6 to 10 m
<i>Quercus palustris</i>	15 to 25 m	10 to 15 m

Genus/species/variety	Height	Width
<i>Quercus palustris</i> 'Green Pillar'	15 to 20 m	3 to 4 m
<i>Quercus robur</i> 'Fastigiata'	15 to 20 m	2 to 5 m
<i>Robinia</i> 'Casque Rouge'	5 to 7 m	5 to 6 m
<i>Robinia pseudoacacia</i> varieties	15 to 20 m	7 to 12 m
<i>Salix alba</i>	10 to 20 m	8 to 15 m
<i>Salix alba</i> 'Tristis'	15 to 20 m	15 to 20 m
<i>Salix fragilis</i>	5 to 15 m	6 to 8 m
<i>Sophora japonica</i>	15 to 20 m	12 to 15 m
<i>Sophora japonica</i> 'Regent'	10 to 15 m	10 to 12 m
<i>Sorbus aucuparia</i>	5 to 15 m	4 to 8 m
<i>Sorbus aucuparia</i> 'Edulis'	12 to 15 m	5 to 7 m
<i>Sorbus domestica</i>	10 to 15 m	8 to 10 m
<i>Sorbus intermedia</i> 'Brouwers'	8 to 10 m	4 to 6 m
<i>Sorbus torminalis</i>	8 to 15 m	6 to 8 m
<i>Sorbus vulgaris</i>	10 to 18 m	4 to 6 m
<i>Tilia americana</i> 'Nova'	17 to 20 m	12 to 20 m
<i>Tilia cordata</i> 'Erecta'	15 to 20 m	5 to 10 m
<i>Tilia cordata</i> 'Greenspire'	12 to 15 m	6 to 12 m
<i>Tilia euchlora</i>	15 to 18 m	7 to 10 m
<i>Tilia flavescens</i> 'Glenleven'	15 to 20 m	8 to 12 m
<i>Ulmus</i> 'Columella'	15 to 20 m	4 to 6 m
<i>Ulmus hollandica</i> 'Lobel'	12 to 15 m	6 to 8 m
<i>Zelkova serrata</i>	15 to 20 m	8 to 12 m
<i>Zelkova serrata</i> 'Green Vase'	15 to 20 m	10 to 12 m

3. Small trees (7-12 / 15 m)

<i>Acer buergerianum</i>	8 to 15 m	4 to 5 m
<i>Acer campestre</i> 'Elsrijk'	8 to 12 m	4 to 6 m
<i>Acer campestre</i> 'Huibers Elegant'	10 to 12 m	4 to 6 m
<i>Acer campestre</i> 'Queen Elizabeth'	10 to 12 m	6 to 8 m
<i>Acer cappadocicum</i> 'Aureum'	10 to 15 m	8 to 10 m
<i>Acer cappadocicum</i> 'Rubrum'	10 to 15 m	5 to 8 m
<i>Acer davidii</i>	8 to 15 m	6 to 8 m
<i>Acer freemanii</i> 'Armstrong'	10 to 15 m	2 to 4 m
<i>Acer freemanii</i> 'Celzam'	12 to 15 m	10 to 12 m
<i>Acer ginnala</i>	5 to 8 m	4 to 10 m
<i>Acer griseum</i>	5 to 8 m	4 to 5 m
<i>Acer japonicum</i> 'Aconitifolium'	3 to 4 m	2 to 4 m
<i>Acer monspessulanum</i>	6 to 10 m	4 to 10 m
<i>Acer neglectum</i> 'Annae'	8 to 12 m	6 to 10 m
<i>Acer opalus</i>	8 to 12 m	5 to 10 m
<i>Acer palmatum</i> varieties	4 to 6 m	2 to 5 m
<i>Acer pensylvanicum</i>	5 to 7 m	3 to 8 m
<i>Acer platanoides</i> 'Globosum'	4 to 6 m	3 to 5 m
<i>Acer rubrum</i>	7 to 12 m	4 to 7 m
<i>Acer rufrinerve</i>	4 to 7 m	2 to 4 m
<i>Acer tataricum</i>	5 to 10 m	5 to 7 m
<i>Aesculus carnea</i> 'Briotii'	8 to 15 m	6 to 10 m
<i>Aesculus glabra</i>	6 to 12(20)	6 to 12
<i>Aesculus hippocastanum</i> 'Umbraculifera'	4 to 5 m	3 to 5 m





1 Groups according to size and growth rates

Genus/species/variety	Height	Width	Genus/species/variety	Height	Width
3. Small trees (7-12 / 15 m)					
<i>Alnus cordata</i>	8 to 15 m	3 to 6 m	<i>Lonicera maackii</i>	4 to 6 m	4 to 8 m
<i>Alnus incana</i> 'Aurea'	8 to 10 m	4 to 7 m	<i>Magnolia kobus</i>	8 to 10 m	4 to 6 m
<i>Amelanchier</i> 'Ballerina'	5 to 8 m	3 to 5 m	<i>Magnolia loebneri</i> 'Leonard Messel'	4 to 6 m	3 to 4 m
<i>Amelanchier laevis</i>	3 to 8 m	3 to 5 m	<i>Magnolia loebneri</i> 'Merrill'	4 to 6 m	3 to 4 m
<i>Amelanchier lamarckii</i>	5 to 8 m	3 to 5 m	<i>Magnolia soulangeana</i>	3 to 8 m	3 to 5 m
<i>Aralia elata</i>	3 to 7 m	3 to 4 m	<i>Malus</i> varieties	6 to 8 m	4 to 6 m
<i>Betula albosinensis</i>	6 to 10 m	4 to 6 m	<i>Malus floribunda</i>	5 to 8 m	4 to 8 m
<i>Betula pendula</i> 'Youngii'	5 to 7 m	3 to 4 m	<i>Malus sylvestris</i>	5 to 10 m	4 to 6 m
<i>Betula pubescens</i>	5 to 15 m	3 to 5 m	<i>Malus toringo sargentii</i> - seedling	6 to 8 m	6 to 10 m
<i>Buxus sempervirens</i>	1 to 6 m	2 to 3 m	<i>Malus toringo sargentii</i> - grafted	7 to 10 m	4 to 6 m
<i>Catalpa bignonioides</i>	8 to 12 m	4 to 8 m	<i>Malus tschonoskii</i>	8 to 15 m	2 to 6 m
<i>Catalpa bignonioides</i> 'Aurea'	6 to 8 m	5 to 8 m	<i>Morus alba</i>	10 to 15 m	4 to 6 m
<i>Catalpa bignonioides</i> 'Nana'	4 to 6 m	2 to 4 m	<i>Morus alba</i> 'Fruitless'	8 to 10 m	4 to 8 m
<i>Cercidiphyllum japonicum</i>	8 to 15 m	4 to 10 m	<i>Morus alba</i> 'Macrophylla'	10 to 15 m	6 to 7 m
<i>Cercis siliquastrum</i>	4 to 6 m	4 to 6 m	<i>Morus nigra</i>	6 to 10 m	6 to 10 m
<i>Cornus nuttallii</i> 'Eddie's White Wonder'	4 to 5 m	3 to 5 m	<i>Nothofagus antarctica</i>	4 to 8 m	3 to 4 m
<i>Cornus alternifolia</i>	4 to 8 m	4 to 6 m	<i>Parrotia persica</i>	5 to 10 m	5 to 7 m
<i>Cornus controversa</i>	6 to 10 m	4 to 6 m	<i>Phellodendron amurense</i>	10 to 12 m	10 to 15 m
<i>Cornus florida</i>	5 to 10 m	3 to 5 m	<i>Prunus avium</i> 'Plena'	7 to 12 m	4 to 6 m
<i>Cornus florida rubra</i>	5 to 10 m	3 to 5 m	<i>Prunus cerasifera</i> 'Nigra'	5 to 7 m	3 to 5 m
<i>Cornus kousa</i>	4 to 7 m	3 to 4 m	<i>Prunus fruticosa</i> 'Globosa'	3 to 5 m	2 to 3 m
<i>Cornus kousa chinensis</i>	5 to 8 m	4 to 5 m	<i>Prunus gondouinii</i> 'Schnee'	3 to 5 m	3 to 5 m
<i>Cornus mas</i>	3 to 8 m	3 to 6 m	<i>Prunus hillieri</i> 'Spire'	6 to 8 m	1.5 to 3 m
<i>Cornus nuttallii</i>	4 to 6 m	2 to 5 m	<i>Prunus lusitanica</i>	5 to 7 m	3 to 6 m
<i>Crataegus coccinea</i>	5 to 9 m	4 to 6 m	<i>Prunus maackii</i> 'Amber Beauty'	5 to 12 m	5 to 8 m
<i>Crataegus laevigata</i> 'Paul's Scarlet'	3 to 10 m	3 to 5 m	<i>Prunus mahaleb</i>	3 to 12 m	6 to 8 m
<i>Crataegus lavallei</i> 'Carrierei'	5 to 10 m	3 to 6 m	<i>Prunus padus</i>	3 to 10 m	4 to 8 m
<i>Crataegus monogyna</i>	2 to 10 m	2 to 5 m	<i>Prunus padus</i> 'Watereri'	3 to 10 m	4 to 8 m
<i>Crataegus monogyna</i> 'Compacta'	3 to 4 m	1.5 to 3 m	<i>Prunus sargentii</i>	5 to 12 m	4 to 8 m
<i>Crataegus monogyna</i> 'Stricta'	5 to 6 m	1 to 2 m	<i>Prunus schmittii</i>	4 to 6 m	2 to 3 m
<i>Crataegus prunifolia</i>	5 to 7 m	3 to 8 m	<i>Prunus serotina</i>	5 to 20 m	5 to 10 m
<i>Davidia involucrata vilmoriniana</i>	6 to 15 m	4 to 8 m	<i>Prunus serrulata</i>	4 to 10 m	2 to 6 m
<i>Elaeagnus angustifolia</i>	6 to 8 m	4 to 6 m	<i>Prunus serrula</i>	5 to 7 m	5 to 7 m
<i>Euodia hupehensis</i>	6 to 12 m	6 to 12 m	<i>Prunus serrulata</i> varieties	4 to 7 m	3 to 5 m
<i>Fagus sylvatica</i> 'Purpurea Pendula'	8 to 10 m	4 to 6 m	<i>Prunus subhirtella</i> varieties	3 to 6 m	3 to 5 m
<i>Fraxinus americana</i> 'Autumn Applause'	10 to 12 m	6 to 8 m	<i>Prunus triloba</i>	1 to 3 m	1 to 2 m
<i>Fraxinus excelsior</i> 'Nana'	4 to 8 m	2 to 4 m	<i>Prunus yedoensis</i>	5 to 12 m	5 to 7 m
<i>Fraxinus excelsior</i> 'Pendula'	8 to 10 m	6 to 10 m	<i>Pyrus calleryana</i> varieties	8 to 15 m	4 to 9 m
<i>Fraxinus ornus</i>	6 to 10 m	3 to 6 m	<i>Pyrus communis</i>	5 to 15 m	5 to 10 m
<i>Fraxinus ornus</i> 'Anita'	6 to 8 m	3 to 5 m	<i>Pyrus communis</i> 'Beech Hill'	8 to 10 m	3 to 5 m
<i>Halesia carolina</i>	5 to 6 m	5 to 6 m	<i>Pyrus nivalis</i>	6 to 10 m	5 to 7 m
<i>Hippophae rhamnoides</i>	3 to 10 m	2 to 3 m	<i>Pyrus regelii</i>	5 to 9 m	3 to 4 m
<i>Ilex aquifolium</i>	2 to 10 m	2 to 4 m	<i>Pyrus salicifolia</i>	4 to 7 m	3 to 4 m
<i>Ilex aquifolium</i> 'Alaska'	2 to 3 m	1 to 1.5 m	<i>Pyrus salicifolia</i> 'Pendula'	5 to 8 m	5 to 6 m
<i>Ilex aquifolium</i> 'J.C. van Tol'	6 to 8 m	3 to 4 m	<i>Quercus palustris</i> 'Green Dwarf'	5 to 8 m	2 to 3 m
<i>Koeleruteria paniculata</i>	6 to 8 m	4 to 8 m	<i>Quercus pontica</i>	4 to 6 m	2 to 4 m
<i>Laburnum anagyroides</i>	5 to 7 m	3 to 4 m	<i>Quercus turneri</i> 'Pseudoturneri'	5 to 10 m	5 to 8 m
<i>Laburnum watereri</i> 'Vossii'	5 to 7 m	3 to 4 m	<i>Rhamnus catharticus</i>	2 to 8 m	2 to 4 m
<i>Liquidambar styraciflua</i> 'Slender Silhouette'	10 to 15 m	0.5 to 0.8 m	<i>Rhus glabra</i>	3 to 6 m	3 to 6 m
			<i>Rhus typhina</i>	3 to 10 m	3 to 5 m





Groups according to size and growth rates 1

Genus/species/variety	Height	Width	Genus/species/variety	Height	Width
Robinia 'Casque Rouge'	5 to 7 m	5 to 6 m	Acer pensylvanicum	5 to 7 m	3 to 8 m
Robinia pseudoacacia 'Frisia'	6 to 10 m	5 to 8 m	Acer rufrinerve	4 to 7 m	2 to 4 m
Robinia pseudoacacia 'Umbraculifera'	4 to 6 m	4 to 6 m	Acer shirasawanum 'Aureum'	3 to 4 m	3 to 4 m
Salix acutifolia 'Pendulifolia'	4 to 6 m	4 to 6 m	Aesculus parviflora	3 to 6 m	2 to 6 m
Salix alba 'Chermesina'	9 to 15 m	9 to 15 m	Amelanchier 'Ballerina'	5 to 8 m	3 to 5 m
Salix caprea	3 to 13 m	3 to 5 m	Amelanchier laevis	3 to 8 m	3 to 5 m
Salix caprea 'Mas'	3 to 8 m	3 to 5 m	Amelanchier lamarckii	5 to 8 m	3 to 5 m
Salix caprea 'Pendula'	1,5 to 3 m	1 to 2 m	Aralia elata	3 to 7 m	3 to 4 m
Salix daphnoides 'Praecox'	5 to 8 m	3 to 5 m	Aralia elata 'Variegata'	3 to 4 m	2 to 3 m
Salix elaeagnos	2 to 6 m	3 to 6 m	Berberis julianae	2 to 4 m	2 to 3 m
Salix fragilis	5 to 15 m	6 to 8 m	Berberis ottawensis 'Superba'	3 to 4 m	2 to 4 m
Salix matsudana 'Tortuosa'	4 to 12 m	4 to 6 m	Buxus sempervirens	1 to 6 m	2 to 3 m
Salix smithiana	4 to 6 m	4 to 6 m	Caragana arborescens	3 to 5 m	2 to 3 m
Salix viminalis	2 to 10 m	4 to 8 m	Cercis siliquastrum	4 to 6 m	4 to 6 m
Sophora japonica 'Pendula'	5 to 8 m	5 to 8 m	Chionanthus virginicus	3 to 5 m	3 to 5 m
Sorbus 'Joseph Rock'	6 to 8 m	3 to 4 m	Clerodendron trichotomum fargesii	2 to 3 m	2 to 4 m
Sorbus americana	5 to 10 m	4 to 6 m	Cornus alternifolia	4 to 8 m	4 to 6 m
Sorbus aria varieties	6 to 12 m	4 to 8 m	Cornus controversa	6 to 10 m	4 to 6 m
Sorbus aucuparia	5 to 15 m	4 to 8 m	Cornus florida	5 to 10 m	3 to 5 m
Sorbus aucuparia 'Fastigiata'	5 to 7 m	2 to 4 m	Cornus florida rubra	5 to 10 m	3 to 5 m
Sorbus aucuparia 'Sheerwater Seedling'	6 to 10 m	3 is 4 m	Cornus kousa	4 to 7 m	3 to 4 m
Sorbus decora	6 to 10 m	4 to 6 m	Cornus kousa chinensis	5 to 8 m	4 to 5 m
Sorbus domestica	10 to 15 m	8 to 10 m	Cornus mas	3 to 8 m	3 to 6 m
Sorbus hybrida 'Gibbsii'	5 to 7 m	3 to 4 m	Cornus nuttallii	4 to 6 m	2 to 5 m
Sorbus intermedia 'Brouwers'	8 to 10 m	4 to 6 m	Cornus officinalis	4 to 10 m	4 to 8 m
Sorbus serotina	5 to 10 m	5 to 8 m	Cornus sanguinea	1 to 8 m	2 to 4 m
Sorbus thuringiaca 'Fastigiata'	5 to 8 m	3 to 4 m	Corylus in species and varieties	2 to 6 m	2 to 6 m
Sorbus torminalis	8 to 15 m	6 to 8 m	Cotinus coggygria	3 to 5 m	3 to 5 m
Sorbus vilmorinii	3 to 6 m	3 to 5 m	Cotoneaster bullatus	3 to 5 m	2 to 3 m
Stewartia pseudocamellia	4 to 6 m	4 to 6 m	Cotoneaster salicifolius floccosus	3 to 4 m	2 to 3 m
Styrax obassia	5 to 10 m	4 to 7 m	Cotoneaster watereri	3 to 4 m	3 to 4 m
Tilia cordata 'Rancho'	9 to 12 m	4 to 6 m	Cotoneaster watereri 'Cornubia'	3 to 7 m	3 to 4 m
Tilia cordata 'Roelvo'	10 to 15 m	3 to 6 m	Crataegus coccinea	5 to 9 m	4 to 6 m
Tilia mongolica	6 to 15 m	5 to 7 m	Crataegus laevigata	2 to 5 m	3 to 6 m
Tilia platyphyllos 'Laciniata'	10 to 15 m	8 to 10 m	Crataegus laevigata 'Paul's Scarlet'	3 to 10 m	3 to 5 m
Tilia platyphyllos 'Örebro'	10 to 18 m	4 to 5 m	Crataegus lavalleyi 'Carrierei'	5 to 10 m	3 to 6 m
Tilia platyphyllos 'Prince's Street'	10 to 12 m	4 to 5 m	Crataegus monogyna	2 to 10 m	2 to 5 m
Ulmus hollandica 'Wredei'	8 to 10 m	3 to 4 m	Deutzia magnifica	3 to 4 m	1 to 2 m
Ulmus 'Sapporo Autumn Gold'	12 to 15 m	5 to 7 m	Deutzia scabra 'Plena'	3 to 4 m	2 to 3 m
Zelkova serrata 'Village Green'	10 to 12 m	5 to 6 m	Elaeagnus angustifolia	6 to 8 m	4 to 6 m
			Elaeagnus commutata	3 to 4 m	3 to 4 m
4. Large shrubs (3-5 / 7 m)			Euonymus europaeus	2 to 6 m	2 to 4 m
Acer campestre 'Nanum'	4 to 7 m	2 to 3 m	Euonymus europaeus 'Red Cascade'	2 to 6 m	2 to 4 m
Acer ginnala	5 to 8 m	4 to 10 m	Euonymus planipes	4 to 5 m	4 to 5 m
Acer griseum	5 to 8 m	4 to 5 m	Forsythia 'Spectabilis'	3 to 4 m	3 to 4 m
Acer japonicum varieties	3 to 4 m	2 to 4 m	Halesia carolina	5 to 6 m	5 to 6 m
Acer palmatum	4 to 6 m	2 to 5 m	Hamamelis intermedia varieties	3 to 5 m	3 to 4 m
Acer palmatum 'Atropurpureum'	3 to 4 m	2 to 3 m	Hamamelis japonica	3 to 5 m	3 to 4 m
Acer palmatum 'Osakazuki'	3 to 5 m	3 to 5 m	Hamamelis mollis	3 to 4 m	3 to 4 m
Acer palmatum 'Sangokaku'	4 to 6 m	1.5 to 2	Hamamelis virginiana	5 to 6 m	3 to 5 m





1 Groups according to size and growth rates

Genus/species/variety	Height	Width	Genus/species/variety	Height	Width
4. Large shrubs (3-5 / 7 m)					
Hippophae rhamnoides	3 to 10 m	2 to 3 m	Rhus glabra	3 to 6 m	3 to 6 m
Ilex altaclerensis 'Golden King'	3 to 4 m	3 to 4 m	Rhus typhina	3 to 10 m	3 to 5 m
Ilex in species and varieties	2 to 10 m	2 to 4 m	Robinia hispida 'Macrophylla'	2 to 3 m	1 to 2 m
Ilex 'Nellie R. Stevens'	3 to 8 m	2 to 4 m	Rosa moyesii	3 to 5 m	3 to 4 m
Laburnum watereri 'Vossii'	5 to 7 m	3 to 4 m	Salix acutifolia 'Pendulifolia'	4 to 6 m	4 to 6 m
Ligustrum ovalifolium	3 to 5 m	2 to 3 m	Salix caprea	3 to 13 m	3 to 5 m
Ligustrum ovalifolium 'Aureum'	3 to 4 m	1.8 to 2 m	Salix caprea 'Mas'	3 to 8 m	3 to 5 m
Ligustrum vulgare	2 to 5 m	2 to 4 m	Salix cinerea	3 to 6 m	3 to 5 m
Ligustrum vulgare 'Atrovirens'	3 to 4 m	2 to 4 m	Salix daphnoides 'Praecox'	5 to 8 m	3 to 5 m
Liquidambar styraciflua 'Gum Ball'	3 to 8 m	2 to 4 m	Salix daphnoides pomermanica	3 to 6 m	2 to 4 m
Lonicera ledebourii	3 to 4 m	2 to 3 m	Salix elaeagnos	2 to 6 m	3 to 6 m
Lonicera maackii	4 to 6 m	4 to 8 m	Salix fragilis	5 to 15 m	6 to 8 m
Magnolia in species and varieties	2 to 6 m	3 to 4 m	Salix matsudana 'Tortuosa'	4 to 12 m	4 to 6 m
Magnolia loebneri 'Leonard Messel'	4 to 6 m	3 to 4 m	Salix purpurea	2 to 10 m	2 to 6 m
Magnolia loebneri 'Merrill'	4 to 6 m	3 to 4 m	Salix sachalinensis 'Sekka'	2 to 3 m	2 to 3 m
Magnolia sieboldii	3 to 5 m	3 to 4 m	Salix smithiana	4 to 6 m	4 to 6 m
Magnolia soulangiana	3 to 8 m	3 to 5 m	Salix triandra	2 to 4 m	3 to 8 m
Magnolia stellata varieties	2 to 4 m	2 to 3 m	Salix viminalis	2 to 10 m	4 to 8 m
Malus sylvestris	5 to 10 m	4 to 6 m	Sambucus canadensis 'Aurea'	3 to 5 m	2 to 4 m
Malus toringo sargentii Veredlung	2 to 4 m	2 to 4 m	Sambucus canadensis 'Maxima'	3 to 5 m	2 to 4 m
Malus toringo sargentii Sämling	7 to 10 m	4 to 6 m	Sambucus nigra	2 to 7 m	3 to 5 m
Mespilus germanica	3 to 5 m	3 to 5 m	Sambucus racemosa	2 to 4 m	2 to 4 m
Nothofagus antarctica	4 to 8 m	3 to 4 m	Sorbus aria varieties	6 to 12 m	4 to 8 m
Parrotia persica	5 to 10 m	5 to 7 m	Sorbus decora	6 to 10 m	4 to 6 m
Philadelphus inodorus grandiflorus varieties	3 to 5 m	2 to 3 m	Sorbus koehneana	2 to 4 m	2 to 4 m
Photinia villosa	3 to 5 m	2 to 3 m	Sorbus vilmorinii	3 to 6 m	3 to 5 m
Phyllostachys in species and varieties	3 to 7 m	3 to 7 m	Staphylea colchica	3 to 5 m	2 to 4 m
Platanus acerifolia 'Alphen's Globe'	4 to 7 m	3 to 4 m	Stewartia pseudocamellia	4 to 6 m	4 to 6 m
Prunus 'Accolade'	5 to 8 m	3 to 5 m	Stranvaesia davidiana	2 to 5 m	2 to 4 m
Prunus cerasifera	5 to 7 m	3 to 5 m	Styrax japonicus	3 to 8 m	5 to 8 m
Prunus cerasifera 'Nigra'	5 to 7 m	3 to 5 m	Syringa chinensis	3 to 4 m	3 to 4 m
Prunus laurocerasus varieties	2 to 4 m	2 to 6 m	Syringa josikaea	3 to 5 m	3 to 4 m
Prunus lusitanica	4 to 7 m	3 to 5 m	Syringa prestoniae 'Elinor'	3 to 4 m	3 to 4 m
Prunus mahaleb	3 to 12 m	6 to 8 m	Syringa reflexa	3 to 4 m	3 to 5 m
Prunus padus varieties	3 to 10 m	4 to 8 m	Syringa swegiflexa	3 to 4 m	3 to 4 m
Prunus sargentii	5 to 12 m	4 to 8 m	Syringa vulgaris varieties	3 to 5 m	3 to 5 m
Prunus schmittii	4 to 6 m	2 to 3 m	Tamarix parviflora	3 to 5 m	2 to 3 m
Prunus serotina	5 to 20 m	5 to 10 m	Tilia cordata 'Green Globe'	6 to 8 m	3 to 4 m
Prunus serrulata	4 to 10 m	2 to 6 m	Tilia cordata 'Winter Orange'	6 to 8 m	3 to 4 m
Prunus serrula	5 to 7 m	5 to 7 m	Ulmus glabra 'Pendula'	3 to 5 m	6 to 10 m
Prunus serrulata varieties	4 to 7 m	3 to 5 m	Viburnum lantana	2 to 5 m	2 to 4 m
Prunus subhirtella varieties	3 to 6 m	3 to 5 m	Viburnum opulus	2 to 5 m	2 to 5 m
Prunus yedoensis	5 to 12 m	5 to 7 m	Viburnum rhytidophyllum	3 to 7 m	3 to 4 m
Ptelea trifoliata	4 to 6 m	4 to 6 m			
Quercus pontica	4 to 6 m	2 to 4 m			
Quercus turneri 'Pseudoturneri'	5 to 10 m	5 to 8 m			
Rhamnus catharticus	2 to 8 m	2 to 4 m			
Rhamnus frangula	2 to 7 m	2 to 4 m			
Rhododendron varieties	4 to 6 m	3 to 5 m			





Groups according to size and growth rates 1

Genus/species/variety	Height	Width
5. Normal shrubs / medium shrubs (1.5-3m)		
Acer palmatum varieties	1 to 3 m	1 to 3 m
Amelanchier ovalis	1 to 3 m	2 to 3 m
Aronia melanocarpa 'Viking'	1 to 2 m	1,5 to 2 m
Aucuba japonica	2 to 2.5 m	1.5 to 2 m
Berberis in species and varieties	1.5 to 3 m	1 to 4 m
Buddleja varieties	2 to 3 m	2 to 3 m
Buxus sempervirens 'Bullata'	2 to 3 m	2 to 3 m
Callicarpa bodinieri giraldii 'Profusion'	2 to 3 m	1.5 to 2 m
Calycanthus floridus	2 to 3 m	1.5 to 2 m
Chaenomeles in species and varieties	1 to 3 m	1 to 3 m
Clethra alnifolia	1.5 to 3 m	1 to 2 m
Colutea arborescens	1 to 3 m	1 to 3 m
Cornus in species and varieties	2 to 3 m	3 to 5 m
Corylus avellana 'Contorta'	2 to 4 m	2 to 4 m
Corylopsis spicata	1.5 to 3 m	2 to 3 m
Cotinus coggygia 'Royal Purple'	2 to 4 m	2 to 3 m
Cotoneaster acutifolius	1.5 to 3 m	1.5 to 2 m
Cotoneaster dielsianus	1.5 to 2 m	1.5 to 2 m
Cotoneaster divaricatus	1.5 to 3 m	1.5 to 2 m
Cotoneaster franchetii	2 to 3 m	2 to 3 m
Cotoneaster multiflorus	2 to 4 m	2 to 3 m
Cotoneaster watereri 'Pendulus'	2 to 3 m	1 to 2 m
Cytisus praecox varieties	1 to 2 m	1 to 2 m
Cytisus scoparius varieties	0.5 to 5 m	1 to 2 m
Decaisnea fargesii	2 to 5 m	1.5 to 2 m
Deutzia in species and varieties	1.1 to 3 m	1 to 1.5 m
Elaeagnus multiflora	2 to 3 m	2 to 3 m
Elaeagnus pungens 'Maculata'	1 to 2 m	1 to 2 m
Enkianthus campanulatus	2.5 to 4 m	1.5 to 3 m
Euonymus alatus	2 to 3 m	2 to 3 m
Euonymus yedoensis	2 to 3 m	2 to 4 m
Euonymus phellomanus	1 to 3 m	1 to 3 m
Exochorda macrantha 'The Bride'	1 to 1.8 m	1 to 1.5 m
Fargesia murielae	2 to 3 m	2 to 3 m
Forsythia 'Lynwood'	2.5 to 3 m	2 to 3 m
Forsythia in species and varieties	2 to 3 m	2 to 3 m
Fothergilla major	1.5 to 2.5 m	1 to 3 m
Hamamelis intermedia varieties	2 to 5 m	2 to 4 m
Hedera helix 'Arborescens'	1.5 to 2 m	1.5 to 2 m
Heptacodium miconioides	2 to 4 m	2 to 3 m
Hibiscus in species and varieties	1.5 to 3 m	1 to 1.5 m
Holodiscus discolor arifolius	2 to 3 m	2 to 3 m
Hydrangea aspera 'Macrophylla'	1 to 2 m	1 to 2 m
Hydrangea paniculata 'Grandiflora'	2 to 3 m	2 to 3 m
Hydrangea sargentiana	1.5 to 2 m	1.5 to 2 m
Ilex aquifolium 'Alaska'	2 to 3 m	1 to 1.5 m
Ilex crenata	2 to 4 m	1 to 2 m
Ilex meserveae varieties	2 to 4 m	1.5 to 2 m
Ilex verticillata	2 to 3 m	2 to 3 m

Genus/species/variety	Height	Width
Kalmia latifolia	2 to 3 m	1 to 3 m
Kerria japonica 'Pleniflora'	1.5 to 2 m	1.5 to 2.5 m
Kolkwitzia amabilis	2 to 3 m	2 to 3 m
Ligustrum obtusifolium regelianum	1 to 2 m	1.5 to 3 m
Lonicera korolkowii zabelii	1.5 to 3 m	1.5 to 2 m
Lonicera ledebourii	3 to 4 m	2 to 3 m
Lonicera tatarica	2 to 4 m	2 to 3 m
Lonicera xylosteum	1 to 3 m	1.5 to 3 m
Lonicera xylosteoides 'Clavey's Dwarf'	1 to 3 m	1 to 2 m
Lycium barbarum	2 to 3 m	2 to 3 m
Magnolia liliiflora	2 to 4 m	2 to 3 m
Magnolia stellata	2 to 4 m	2 to 3 m
Magnolia stellata 'Royal Star'	2 to 4 m	2 to 3 m
Mahonia bealei	1.5 to 3 m	1 to 2 m
Malus toringo sargentii - grafted	2 to 4 m	2 to 4 m
Osmanthus heterophyllus	2 to 3 m	2 to 3 m
Philadelphus 'Schneesturm'	2 to 2.5 m	1 to 2 m
Philadelphus 'Virginal'	3 to 4 m	1 to 2 m
Philadelphus coronarius	2 to 4 m	2 to 3 m
Phyllostachys aurea	3 to 7 m	3 to 7 m
Phyllostachys humilis	3 to 7 m	3 to 7 m
Physocarpus opulifolius	2.5 to 4 m	3 to 4 m
Pieris japonica	1.5 to 4 m	2 to 3 m
Pieris japonica 'White Cascade'	1.5 to 2.5 m	1.2 to 2 m
Prunus kurilensis 'Brilliant'	1.5 to 2.5 m	1.5 to 2 m
Prunus laurocerasus varieties	2 to 4 m	2 to 5 m
Prunus lusitanica 'Angustifolia'	2 to 4 m	3 to 5 m
Prunus spinosa	1 to 4 m	2 to 4 m
Prunus triloba	1 to 3 m	1 to 2 m
Pseudosasa japonica	1.5 to 3 m	2 to 4 m
Pyracantha species and varieties	1.5 to 2.5 m	1.5 to 4 m
Rhododendron hybrids	1 to 3.5 m	1.5 to 3 m
Rhododendron Azalea hybrids	1.5 to 2.5	1.5 to 2.5 m
Rhododendron albrechtii	1 to 3 m	1.5 to 2 m
Rhus typhina 'Dissecta'	2 to 4 m	2 to 4 m
Ribes aureum	1 to 2 m	1 to 2 m
Ribes divaricatum	2 to 3 m	2 to 3 m
Ribes sanguineum varieties	1.5 to 2 m	1.5 to 2 m
Rosa - Bedding Roses	0.4 to 1 m	1 to 1.5 m
Rosa - Ground Cover Roses	0.4 to 0.8 m	1 to 1.5 m
Rosa - Hybrid Tea Roses	0.8 to 1.5 m	1 to 1.5 m
Rosa - Climbing Roses	2 to 6 m	0.3 to 3 m
Rosa - Park and Shrub Roses	1 to 3 m	1 to 2 m
Rosa arvensis	0.5 to 2 m	1 to 2 m
Rosa canina	1 to 3 m	2 to 3 m
Rosa glauca	1 to 3 m	2 to 3 m
Rosa hugonis	1.5 to 2 m	2 to 2.5 m
Rosa moyesii	3 to 5 m	3 to 4 m
Rosa multiflora	1.5 to 3 m	2 to 3 m
Rosa multibracteata	1.7 to 2.5 m	1.5 to 2 m





1 Groups according to size and growth rates

Genus/species/variety	Height	Width
5. Normal shrubs / medium shrubs (1.5-3m)		
Rosa omeiensis pteracantha	1.5 to 2 m	1.5 to 2 m
Rosa repens alba	0.4 to 0.6 m	1 to 2 m
Rosa rubiginosa	2 to 3 m	2 to 3 m
Rosa rugosa	1 to 2 m	1 to 2 m
Rosa rugosa alba	1 to 2 m	1 to 2 m
Rosa rugotida	0.7 to 1 m	1 to 1.5 m
Rubus fruticosus	1 to 3 m	1 to 3 m
Rubus odoratus	1.5 to 2.5 m	1.5 to 2 m
Salix aurita	0.5 to 3 m	0.5 to 2 m
Salix balsamifera mas	1 to 2 m	1.5 to 2 m
Salix caprea 'Pendula'	1.5 to 3 m	1 to 2 m
Salix sachalinensis 'Sekka'	2 to 3 m	2 to 3 m
Sorbaria sorbifolia	1 to 3 m	2 to 4 m
Spiraea arguta	1.5 to 2 m	1 to 2 m
Spiraea cinerea 'Grefsheim'	1.5 to 2 m	1 to 2 m
Spiraea nipponica	1.5 to 3 m	2 to 3 m
Spiraea vanhouttei	1.5 to 2.5 m	2 to 3 m
Stranvaesia davidiana	2 to 5 m	2 to 4 m
Symphoricarpos albus laevigatus varieties	1.5 to 2 m	2 to 3 m
Syringa vulgaris varieties	4 to 5 m	2 to 5 m
Tamarix ramosissima	2 to 3 m	2 to 3 m
Ulex europaeus	0.5 to 2 m	1 to 2 m
Vaccinium corymbosum	1 to 2 m	1 to 2 m
Viburnum in species and varieties	1 to 4 m	2 to 3 m
Weigela in species and varieties	1.5 to 3 m	2 to 3 m

6. Small shrubs (0.5-1.5 m)

Acanthopanax sieboldianus	1 to 2 m	1 to 2 m
Acer palmatum 'Dissectum Garnet'	1 to 2 m	1 to 2 m
Aronia melanocarpa	0.5 to 2 m	1 to 2 m
Berberis in species and varieties	0.8 to 2 m	0.8 to 2 m
Buxus sempervirens in species and varieties	0.6 to 6 m	0.6 to 3 m
Caryopteris clandonensis varieties	0.8 to 1.2 m	0.8 to 1 m
Ceanothus delilianus varieties	1 to 2 m	1 to 1.5 m
Ceanothus pallidus varieties	1 to 1.5 m	1 to 1.5 m
Chaenomeles in species and varieties	1 to 1.5 m	1 to 3 m
Cornus stolonifera 'Kelsey'	0.7 to 1 m	0.8 to 1.5 m
Corylopsis pauciflora	1.2 to 1.5 m	1.5 to 2 m
Cotoneaster dammeri 'Coral Beauty'	0.5 to 0.8 m	0.8 to 1.2 m
Cotoneaster dammeri 'Skogholm'	1.2 to 1.5 m	1 to 2 m
Cotoneaster horizontalis	1.2 to 1.5 m	2 to 3 m
Cotoneaster sternianus	1 to 2 m	1 to 2 m
Cytisus beanii	0.4 to 0.8 m	1 to 2 m
Cytisus nigricans 'Cyni'	0.6 to 0.8 m	0.5 to 0.6 m
Cytisus praecox varieties	1 to 2 m	1 to 2 m
Cytisus scoparius varieties	0.5 to 5 m	1 to 2 m
Daphne burkwoodii 'Somerset'	0.5 to 1.2 m	1 to 2 m
Daphne mezereum 'Rubra Select'	1.5 to 1.2 m	1 to 1.5 m
Daphne mezereum alba	1 to 1.2 m	0.8 to 1 m

Genus/species/variety	Height	Width
Deutzia gracilis	0.5 to 0.8 m	0.8 to 1 m
Deutzia hybrida 'Mont Rose'	1.5 to 2 m	1 to 1.5 m
Deutzia kalmiiflora	1.5 to 2 m	1 to 1.5 m
Deutzia lemoinei 'Boule de Neige'	1 to 3 m	1 to 2.5 m
Deutzia magnifica	3 to 4 m	1 to 2 m
Deutzia rosea	1 to 1.5 m	1 to 1.5 m
Deutzia scabra 'Candidissima'	1 to 3 m	1 to 2.5 m
Deutzia scabra 'Plena'	3 to 4 m	2 to 3 m
Deutzia scabra 'Pride of Rochester'	0.5 to 1.5 m	0.8 to 1.5 m
Elaeagnus ebbingei	1 to 2 m	1 to 2 m
Elaeagnus pungens 'Maculata'	1 to 2 m	1 to 2 m
Escallonia 'Donard Seedling'	1 to 1.5 m	1 to 1.5 m
Euonymus alatus 'Compactus'	1 to 1.2 m	1 to 1.2 m
Euonymus fortunei varieties	0.1 to 0.7 m	0.3 to 2 m
Exochorda macrantha 'The Bride'	1 to 1.8 m	1 to 1.5 m
Fargesia murielae 'Simba'	1.5 to 1.8 m	1.5 to 1.8 m
Forsythia ovata 'Tetragold'	1 to 1.5 m	1.2 to 1.5 m
Fothergilla gardenii	0.75 to 1 m	1 to 1.5 m
Genista tinctoria	0.3 to 1 m	0.3 to 0.8 m
Hedera colchica varieties	1 to 2 m	1 to 2 m
Hedera helix 'Arborescens'	1.5 to 2 m	1.5 to 2 m
Hydrangea arborescens varieties	1 to 2.5 m	1 to 2 m
Hydrangea aspera 'Macrophylla'	1 to 2 m	1 to 2 m
Hydrangea quercifolia	1 to 2 m	1 to 2 m
Hydrangea serrata varieties	1 to 15 m	1 to 2 m
Hypericum 'Hidcote'	0.7 to 1.3 m	1 to 1.2 m
Hypericum androsaemum	0.6 to 1 m	0.6 to 1 m
Hypericum kalmianum 'Gemo'	0.6 to 1 m	0.8 to 1.2 m
Hypericum patulum henryi	0.8 to 1.2 m	0.8 to 1 m
Ilex crenata varieties	0.5 to 2 m	0.5 to 2 m
Ilex meserveae varieties	2 to 4 m	1.5 to 2 m
Kalmia angustifolia 'Rubra'	0.5 to 1 m	0.5 to 1 m
Kalmia latifolia	2 to 3 m	1 to 3 m
Kalmia latifolia 'Ostbo Red'	0.5 to 1.2 m	0.5 to 1.2 m
Kerria japonica	0.8 to 2 m	0.8 to 1.5 m
Ledum palustre	0.5 to 1 m	0.5 to 1 m
Lespedeza thunbergii	1 to 2 m	1 to 2 m
Leucothoe walteri	0.6 to 1.5 m	0.8 to 1.2 m
Ligustrum delavayanum	1 to 2 m	1 to 2 m
Lonicera acuminata	0.5 to 3 m	0.8 to 1.2 m
Lonicera caerulea	0.5 to 1.5 m	1 to 2 m
Lonicera nitida varieties	1 to 1.5 m	1 to 1.5 m
Lonicera pileata	0.8 to 1 m	1 to 1.2 m
Mahonia aquifolium	0.6 to 1.2 m	0.6 to 1.2 m
Mahonia aquifolium 'Apollo'	0.6 to 1.2 m	0.6 to 1.2 m
Malus 'Tina'	1 to 2 m	1 to 2 m
Myrica gale	0.5 to 1.5 m	0.5 to 1.5 m
Paeonia suffruticosa varieties	0.6 to 1 m	0.6 to 1 m
Perovskia abrotanoides	1 to 1.5 m	1 to 1.5 m
Philadelphus varieties'	0.8 to 1.5 m	1 to 2 m





Groups according to size and growth rates 1

Genus/species/variety	Height	Width
Photinia fraseri 'Red Robin'	1.2 to 1.5 m	1.2 to 1.5 m
Pieris floribunda	1 to 2 m	1.5 to 2 m
Pieris japonica 'Red Mill'	1.2 to 2 m	1.2 to 1.5 m
Pleioblastus humilis	0.7 to 1.2 m	2 to 4 m
Potentilla varieties	0.6 to 1.2 m	0.8 to 1.5 m
Prunus cistena	1.2 to 1.5 m	1.2 to 1.5 m
Prunus laurocerasus 'Cherry Brandy'	0.6 to 0.8 m	2 to 3 m
Prunus laurocerasus 'Otto Luyken'	1 to 1.5 m	2 to 3 m
Prunus tenella	0.6 to 1.5 m	1 to 2 m
Prunus tenella 'Fire Hill'	0.5 to 1.7 m	2 to 3 m
Pyracantha 'Red Cushion'	0.5 to 0.8 m	0.8 to 1 m
Rhododendron yakushimanum hybrids	0.6 to 1.5 m	0.8 to 1.5 m
Rhododendron Azalea hybrids	0.3 to 0.5 m	0.3 to 0.8 m
Rhododendron canadense	0.6 to 1.2 m	1 to 1.5 m
Rhododendron ferrugineum	0.7 m	1 m
Rhododendron impeditum 'Blue Tit Magor'	0.8 to 1.2 m	0.5 to 1 m
Rhododendron impeditum 'Gristede'	0.5 to 1 m	0.5 to 0.8 m
Rhododendron minus	0.8 to 1.5 m	0.8 to 1.5 m
Rhododendron russatum 'Azurwolke'	0.6 to 0.8 m	0.6 to 0.8 m
Rhodotypos scandens	1 to 2 m	1 to 2 m
Ribes alpinum 'Schmidt'	1 to 1.5 m	1 to 2 m
Ribes sanguineum varieties	1.5 to 2 m	1.5 to 2 m
Rosa - Bedding Roses	0.4 to 1 m	1 to 1.5 m
Rosa - Ground Cover Roses	0.4 to 0.8 m	1 to 1.5 m
Rosa blanda	0.2 to 0.8 m	2 to 3 m
Rosa canina 'Kiese'	1.5 m	2 to 3 m
Rosa carolina	0.5 to 1.2 m	1.2 to 1.5 m
Rosa gallica	0.2 to 1 m	1 to 2 m
Rosa nitida	0.5 to 1 m	1 to 1.5 m
Rosa pimpinellifolia	0.5 to 1.5 m	1 to 2 m
Rosa repens 'Alba'	0.4 to 0.6 m	1 to 2 m
Rosa rugosa 'Dagmar Hastrup'	0.8 to 1 m	1 to 2 m
Rosa rugosa 'Hansa'	1 to 2 m	1 to 1.5 m
Rosa rugosa 'Max Graf'	1 to 2 m	1 to 2 m
Rosa rugotida	0.7 to 1 m	1 to 1.5 m
Rubus idaeus	0.5 to 2 m	1 to 1.5 m
Salix hastata 'Wehrhahnii'	1 to 1.2 m	1 to 1.5 m
Salix helvetica	0.3 to 1.2 m	0.8 to 1.2 m
Salix lanata	0.6 to 1.2 m	0.8 to 1 m
Salix purpurea 'Nana'	0.5 to 1.5 m	3 m
Salix purpurea 'Pendula'	0.5 to 0.8 m	1.5 m
Salix repens nitida	0.5 to 0.8 m	1 to 1.5 m
Salix rosmarinifolia	1 to 1.5 m	1 to 2 m
Sasa veitchii	0.3 to 0.8 m	2 to 4 m
Skimmia japonica	0.8 to 1 m	1 to 1.5 m
Skimmia japonica 'Rubella'	0.6 to 1 m	0.6 to 1.5 m
Spiraea in species and varieties	0.5 to 1.5 m	0.5 to 2 m
Stephanandra incisa	1.2 to 1.5 m	1.2 to 1.5 m
Stephanandra incisa 'Crispa'	0.4 to 0.8 m	1 to 1.5 m
Stephanandra tanakae	1.2 to 1.5 m	1.2 to 1.5 m

Genus/species/variety	Height	Width
Symphoricarpos chenaultii 'Hancock'	0.8 to 1.2 m	1 to 1.5 m
Symphoricarpos doorenbosii 'Magic Berry'	0.8 to 1 m	0.8 to 1 m
Symphoricarpos orbiculatus	1 to 1.5 m	1 to 2 m
Syringa meyeri 'Palibin'	0.8 to 1.2 m	0.8 to 1.2 m
Syringa microphylla 'Superba'	1 to 1.5 m	1 to 2 m
Vaccinium corymbosum	1 to 2 m	1 to 2 m
Viburnum carlesii	1.2 to 1.5 m	1.2 to 1.5 m
Viburnum carlesii 'Aurora'	1 to 1.5 m	1 to 1.5 m
Viburnum plicatum 'Watanabe'	1 to 1.5 m	1 to 1.5 m
Viburnum tinus	1 to 1.5 m	1.5 to 2 m
Viburnum tinus 'Eve Price'	1 to 1.5 m	1 to 1.5 m
Vinca major	0.5 to 0.8 m	0.5 to 0.8 m

7. Dwarf shrubs (0.1-0.5m)

Arctostaphylos uva-ursi	0.2 to 0.3 m	0.6 to 1 m
Berberis buxifolia 'Nana'	0.3 to 0.5 m	0.3 to 0.5 m
Berberis thunbergii varieties	0.3 to 0.6 m	0.4 to 0.6 m
Buxus sempervirens 'Blauer Heinz'	0.6 to 1 m	0.6 to 1 m
Buxus sempervirens 'Handsworthiensis'	0.6 to 1 m	0.6 to 1 m
Buxus sempervirens arborescens	0.6 to 1 m	0.6 to 1 m
Buxus sempervirens 'Suffruticosa'	0.6 to 1 m	0.6 to 1 m
Calluna vulgaris varieties	0.2 to 0.7 m	0.2 to 0.5 m
Caragana arborescens 'Pendula'	1 to 3 m	1 to 1.5 m
Cotoneaster adpressus	0.2 to 0.5 m	0.5 to 0.8 m
Cotoneaster dammeri varieties	0.2 to 0.5 m	0.4 to 1 m
Cotoneaster microphyllus 'Cochleatus'	0.3 to 0.5 m	0.3 to 0.8 m
Cotoneaster microphyllus 'Streibs Findling'	0.1 to 0.2 m	0.2 to 0.3 m
Cotoneaster praecox	0.4 to 0.8 m	1 to 1.5 m
Cotoneaster salicifolius 'Herbstfeuer'	0.2 to 0.5 m	1 to 1.5 m
Cotoneaster salicifolius 'Parkteppich'	0.3 to 0.5 m	0.8 to 1 m
Cotoneaster watereri 'Pendulus'	1.5 to 3 m	1 to 2 m
Cytisus species	0.2 to 0.8 m	0.2 to 2 m
Daboecia in species and varieties	0.2 to 0.5 m	0.3 to 0.4 m
Daphne cneorum	0.1 to 0.4 m	0.4 to 0.8 m
Empetrum nigrum	0.1 to 0.5 m	0.4 to 0.6 m
Erica carnea varieties	0.1 to 0.3 m	0.3 to 0.5 m
Erica cinerea varieties	0.2 to 0.6 m	0.2 to 0.6 m
Erica darleyensis varieties	0.2 to 0.4 m	0.2 to 0.4 m
Erica vagans varieties	0.2 to 0.5 m	0.4 to 0.8 m
Euonymus fortunei varieties	0.1 to 0.7 m	0.3 to 1.5 m
Gaultheria procumbens	0.1 to 0.2 m	0.2 to 0.4 m
Gaultheria shallon	0.2 to 1 m	0.8 to 1 m
Genista lydia	0.3 to 0.5 m	0.5 to 1 m
Genista radiata	0.4 to 0.8 m	0.5 to 1 m
Genista sagittalis	0.1 to 0.2 m	0.2 to 0.5 m
Genista tinctoria	0.3 to 1 m	0.3 to 0.8 m
Genista tinctoria 'Plena'	0.3 to 0.8 m	0.3 to 0.8 m
Hebe ochracea	0.3 to 0.6 m	0.5 to 1 m





1 Groups according to size and growth rates

Genus/species/variety	Height	Width
7. Dwarf shrubs (0.1-0.5m)		
<i>Hypericum moserianum</i>	0.3 to 0.5 m	0.3 to 0.6 m
<i>Ilex crenata</i> varieties	1 to 1.5 m	1.5 to 2 m
<i>Kalmia latifolia</i>	2 to 3 m	1 to 3 m
<i>Kalmia latifolia</i> 'Ostbo Red'	0.5 to 1.2 m	0.5 to 1.2 m
<i>Lavandula angustifolia</i> varieties	0.4 to 0.5 m	0.4 to 0.5 m
<i>Ledum palustre</i>	0.5 to 1 m	0.5 to 1 m
<i>Ligustrum vulgare</i> 'Lodense'	0.4 to 1 m	0.5 to 0.8 m
<i>Pernettya mucronata</i> varieties	0.6 to 1 m	0.6 to 1 m
<i>Potentilla fruticosa</i> mandshurica	0.3 to 0.5 m	0.6 to 1 m
<i>Rhododendron</i> 'Radistrotum'	0.2 to 0.3 m	0.3 to 0.5 m
<i>Rhododendron</i> camtschaticum	0.2 to 0.3 m	0.3 to 0.5 m
<i>Rhododendron carolinianum</i> varieties	0.3 to 1 m	0.6 to 1 m
<i>Rhododendron impeditum</i> varieties	0.1 to 0.4 m	0.5 to 1 m
<i>Rhododendron kelticum</i>	0.1 to 0.2 m	0.2 to 0.4 m
<i>Rhododendron radicans</i>	0.1 to 0.2 m	0.2 to 0.4 m
<i>Rhododendron Repens</i> hybrids	0.4 to 0.6 m	0.8 to 1.3 m
<i>Rhododendron Yakushmanum</i> hybrids	0.4 to 0.8 m	1 to 1.2 m
<i>Rhododendron Azalea</i> hybrids	0.3 to 0.5 m	0.3 to 0.5 m
Rosa - Beeding Roses	0.4 to 1 m	1 to 1.5 m
Rosa - Ground Cover Roses	0.4 to 0.8 m	1 to 1.5 m
<i>Rubus calycinoideis</i>	0.1 to 0.2 m	0.5 to 1 m
<i>Salix grahamii</i>	0.2 to 0.3 m	0.6 to 1 m
<i>Salix helvetica</i>	0.3 to 1.2 m	0.8 to 1.2 m
<i>Salix repens argentea</i>	0.3 to 0.5 m	0.5 to 1 m
<i>Sasa veitchii</i>	0.3 to 0.8 m	2 to 4 m
<i>Spiraea betulifolia</i> 'Tor'	0.5 to 1 m	1 to 1.5 m
<i>Spiraea decumbens</i>	0.2 to 0.3 m	0.4 to 0.5 m
<i>Spiraea japonica</i> 'Little Princess'	0.5 m	0.9 m
<i>Stephanandra incisa</i> 'Crispa'	0.4 to 0.8 m	1 to 1.5 m
<i>Vaccinium macrocarpon</i>	0.1 to 0.3 m	0.5 to 0.8 m
<i>Vaccinium vitis-idaea</i>	0.2 to 0.3 m	0.2 to 0.3 m
<i>Viburnum davidii</i>	0.3 to 1 m	1 to 1.5 m

8. Semi-shrubs (base lignified, shoots not)

<i>Ceanothus</i> varieties	1 to 1.5 m	1 to 1.5 m
<i>Clematis durandii</i>	1.2 to 1.5 m	1 to 1.5 m
<i>Clematis texensis</i> varieties	1 to 1.5 m	1 to 1.5 m
<i>Lavandula angustifolia</i> varieties	0.3 to 0.5 m	0.3 to 0.5 m
<i>Perovskia abrotanoides</i>	1 to 1.5 m	1 to 1.5 m

9. Climbers

See Table no. 50, Climbers

Conifers

Genus/species/variety	Height	Width
1. Large trees (20-40 m)		
<i>Abies concolor</i>	20 to 25 m	4 to 8 m
<i>Abies homolepis</i>	20 to 25 m	4 to 6 m
<i>Abies nordmanniana</i>	25 to 40 m	5 to 8 m
<i>Cedrus atlantica</i> 'Glauca'	15 to 40 m	6 to 10 m
<i>Cedrus deodara</i>	15 to 20 m	6 to 10 m
<i>Cedrus libani</i>	15 to 20 m	6 to 10 m
<i>Cupressocyparis leylandii</i>	15 to 25 m	2 to 5 m
<i>Ginkgo biloba</i>	15 to 30 m	10 to 15 m
<i>Larix decidua</i>	25 to 50 m	4 to 10 m
<i>Larix kaempferi</i>	25 to 30 m	8 to 10 m
<i>Metasequoia glyptostroboides</i>	20 to 35 m	6 to 8 m
<i>Picea abies</i>	25 to 60 m	6 to 10 m
<i>Picea omorika</i>	15 to 35 m	2 to 3 m
<i>Picea orientalis</i>	20 to 30 m	4 to 8 m
<i>Picea pungens</i>	15 to 25 m	6 to 8 m
<i>Picea sitchensis</i>	20 to 25 m	6 to 10 m
<i>Pinus jeffreyi</i>	20 to 25 m	8 to 12 m
<i>Pinus nigra austriaca</i>	20 to 40 m	6 to 12 m
<i>Pinus ponderosa</i>	15 to 25 m	6 to 10 m
<i>Pinus strobus</i>	15 to 40 m	6 to 10 m
<i>Pinus sylvestris</i>	10 to 30 m	5 to 10 m
<i>Pinus wallichiana</i>	15 to 30 m	6 to 12 m
<i>Pseudotsuga menziesii caesia</i>	30 to 40 m	7 to 10 m
<i>Sequoiadendron giganteum</i>	25 to 35 m	10 to 12 m
<i>Taxodium distichum</i>	20 to 30 m	4 to 10 m
2. Medium-size trees (12 / 15-20 m)		
<i>Abies procera</i> 'Glauca'	15 to 18 m	4 to 6 m
<i>Abies veitchii</i>	15 to 18 m	4 to 6 m
<i>Cedrus deodara</i>	15 to 20 m	6 to 10 m
<i>Cedrus libani</i>	15 to 20 m	6 to 10 m
<i>Picea breweriana</i>	10 to 15 m	4 to 6 m
<i>Picea pungens</i>	15 to 25 m	6 to 8 m
<i>Picea pungens</i> varieties	10 to 15 m	3 to 4 m
<i>Picea pungens glauca</i>	10 to 20 m	6 to 8 m
<i>Pinus banksiana</i>	12 to 15 m	6 to 10 m
<i>Pinus cembra</i>	15 to 20 m	2 to 4 m
<i>Pinus contorta</i>	10 to 20 m	4 to 6 m
<i>Pinus peuce</i>	10 to 20 m	4 to 6 m
<i>Pinus schweinerii</i>	12 to 15 m	7 to 10 m
<i>Sequoia sempervirens</i>	6 bis 12 m	3 to 4 m
<i>Taxus baccata</i>	5 to 18 m	5 to 10 m
<i>Thuja occidentalis</i>	15 to 20 m	3 to 5 m
<i>Thuja plicata</i> 'Excelsa'	8 to 20 m	3 to 7 m
<i>Tsuga canadensis</i>	12 to 25 m	4 to 10 m





Groups according to size and growth rates 1

Genus/species/variety	Height	Width
3. Small trees (7-12 / 15 m)		
Abies koreana	5 to 8 m	2 to 3 m
Araucaria araucana	5 to 10 m	3 to 6 m
Cedrus species and varieties	5 to 12 m	3 to 10 m
Chamaecyparis lawsonia varieties	4 to 10 m	1 to 4 m
Chamaecyparis nootkatensis 'Pendula'	8 to 15 m	3 to 5 m
Chamaecyparis pisifera varieties	5 to 8 m	3 to 4 m
Cupressocyparis leylandii 'Castlewellan Gold'	7 to 12 m	2 to 4 m
Juniperus chinensis 'Keteleeri'	2 to 10 m	1 to 3 m
Juniperus virginiana 'Canaertii'	5 to 7 m	2 to 4 m
Juniperus virginiana 'Glauca'	6 to 10 m	2 to 4 m
Larix kaempferi 'Diana'	3 to 8 m	2 to 3 m
Larix kaempferi 'Pendula'	7 to 10 m	2 to 3 m
Picea abies varieties	3 to 8 m	1 to 5 m
Picea omorika varieties	4 to 10 m	1 to 3 m
Picea orientalis varieties	8 to 15 m	4 to 7 m
Picea pungens varieties	10 to 20 m	3 to 8 m
Pinus aristata	2 to 6 m	1 to 2.5 m
Pinus contorta	10 to 20 m	4 to 6 m
Pinus contorta 'Compacta'	2 to 15 m	2 to 6 m
Pinus densiflora 'Pumila'	2 to 3 m	1 to 3 m
Pinus leucodermis	6 to 15 m	3 to 6 m
Pinus leucodermis 'Compact Gem'	6 to 10 m	3 to 6 m
Pinus mugo	4 to 8 m	2 to 4 m
Pinus nigra varieties	4 to 6 m	2 to 3 m
Pinus parviflora 'Glauca'	5 to 15 m	4 to 8 m
Pinus peuce	10 to 20 m	4 to 6 m
Pinus strobus 'Radiata'	3 to 5 m	2 to 3 m
Pinus sylvestris varieties	4 to 10 m	1 to 2 m
Pinus wallichiana 'Densa Hill'	5 to 7 m	1 to 2 m
Pseudolarix amabilis	8 to 15 m	4 to 8 m
Sciadopitys verticillata	5 to 10 m	3 to 4 m
Sequoia sempervirens	6 to 12 m	3 to 4 m
Taxus baccata	5 to 18 m	5 to 10 m
Taxus baccata varieties	2 to 8 m	1 to 8 m
Thuja occidentalis varieties	3 to 8 m	1 to 2 m
Thuja plicata varieties	8 to 15 m	3 to 7 m
Thuja standishii	8 to 10 m	4 to 6 m
Thujopsis dolabrata	5 to 8 m	4 to 6 m
Tsuga diversifolia	5 to 10 m	3 to 4 m
Tsuga mertensiana	8 to 15 m	2 to 4 m
Tsuga mertensiana 'Glauca'	8 to 12 m	2 to 4 m

Genus/species/variety	Height	Width
4. Large shrubs (3-5 / 7 m)		
Cedrus atlantica varieties	5 to 12 m	3 to 8 m
Cedrus deodara 'Pendula'	3 to 5 m	3 to 5 m
Chamaecyparis species and varieties	4 to 10 m	1 to 3 m
Cryptomeria japonica	6 to 8 m	2 to 3 m
Cryptomeria japonica 'Cristata	6 to 8 m	2 to 3 m
Cryptomeria japonica 'Elegans Viridis	6 to 8 m	2 to 3 m
Juniperus communis 'Vemboö'	3 to 5 m	0.5 to 1 m
Juniperus scopulorum 'Wichita Blue'	3 to 5 m	1 to 2 m'
Juniperus species and varieties	2 to 4 m	1 to 3 m
Larix kaempferi 'Diana'	3 to 8 m	2 to 3 m
Picea abies 'Acrocona'	3 to 6 m	1 to 5 m
Picea abies 'Inversa'	3 to 8 m	1 to 4 m
Picea abies 'Little Gem'	3 to 8 m	1 to 4 m
Picea abies 'Maxwellii'	3 to 8 m	1 to 4 m
Picea abies 'Nidiformis'	1 to 5 m	1 to 4 m
Picea abies 'Pygmaea'	3 to 5 m	1 to 4 m
Picea abies 'Virgata'	3 to 8 m	1 to 4 m
Pinus aristata	2 to 6 m	1 to 3 m
Pinus contorta 'Compacta'	2 to 15 m	2 to 6 m
Pinus densiflora 'Pumila'	2 to 3 m	1 to 3 m
Pinus mugo varieties	4 to 5 m	2 to 4 m
Pinus strobus 'Radiata'	3 to 5 m	2 to 3 m
Pinus sylvestris 'Watereri'	3 to 5 m	3 to 5 m
Taxus species and varieties	2 to 8 m	1 to 8 m
Thuja species and varieties	3 to 8 m	1 to 2 m
Thujopsis dolabrata	5 to 8 m	4 to 6 m
Tsuga canadensis 'Pendula'	3 to 4 m	3 to 4 m
Tsuga diversifolia	5 to 10 m	3 to 4 m
Tsuga mertensiana 'Glauca'	8 to 12 m	2 to 4 m
5. Normal shrubs / medium shrubs (1.5-3 m)		
Juniperus media 'Pfitzeriana Aurea'	2 to 4 m	2 to 6 m
Picea pungens 'Edith'	2 to 3 m	2 to 3 m
Pinus mugo mughus	2 to 5 m	2 to 5 m
Taxus baccata 'Washingtonii'	1.5 to 5 m	1 to 8 m
Taxus cuspidata 'Nana'	1 to 3 m	3 to 7 m
Thuja occidentalis 'Woodwardii'	1 to 3 m	2 to 4 m
6. Small shrubs (0.5-1.5 m)		
Chamaecyparis obtusa 'Nana Gracilis'	1 to 2 m	1 to 2 m
Chamaecyparis pisifera 'Boulevard'	2 to 4 m	1 to 2 m
Juniperus communis varieties	0.3 to 0.8 m	1.5 to 3 m
Juniperus media 'Old Gold'	1 to 2 m	2 to 3 m
Juniperus sabina varieties	0.5 to 1.5 m	2 to 3 m
Juniperus virginiana 'Grey Owl'	2 to 3 m	3 to 5 m
Picea abies varieties	1 to 5 m	0.5 to 4 m
Picea pungens 'Glauca Globosa'	1 to 3 m	1 to 3 m
Pinus densiflora 'Pumila'	2 to 3 m	1 to 3 m
Pinus mugo varieties	4 to 5 m	2 to 4 m





1 Groups according to size and growth rates

Genus/species/variety	Height	Width
6. Small shrubs (0.5-1.5 m)		
<i>Pinus parviflora</i> 'Negishi'	1 to 1.5 m	0.8 to 1.5 m
<i>Pinus pumila</i> varieties	2 to 3 m	1 to 2 m
<i>Pinus strobus</i> 'Macopin'	1 to 1.5 m	1 to 1.5 m
<i>Pinus strobus</i> 'Radiata'	3 to 5 m	2 to 3 m
<i>Taxus baccata</i> 'Repandens'	0.5 to 0.7 m	2 to 3 m
<i>Taxus cuspidata</i> 'Nana'	1 to 3 m	3 to 7 m
<i>Taxus media</i> 'Brownii'	2 to 3 m	3 to 4 m
<i>Thuja occidentalis</i> 'Tiny Tim'	0.5 to 1 m	0.8 to 1.5 m

Genus/species/variety	Height	Width
7. Dwarf shrubs (0.1-0.5 m)		
<i>Juniperus communis</i> 'Repanda'	0.3 to 0.5 m	1.5 to 2 m
<i>Juniperus horizontalis</i> varieties	0.2 to 0.7 m	1.5 to 3 m
<i>Juniperus sabina</i> varieties	0.5 to 1.5 m	2 to 3 m
<i>Juniperus squamata</i> varieties	0.3 to 0.8 m	1.5 to 3 m
<i>Picea abies</i> 'Pumila Glauca'	0.4 to 0.6 m	1 to 1.5 m
<i>Picea glauca</i> 'Echiniformis'	0.3 to 2 m	0.5 to 2 m
<i>Pinus mugo</i> 'Mops'	0.3 to 2 m	0.5 to 2 m
<i>Taxus baccata</i> 'Repandens'	0.5 to 0.7 m	2 to 3 m
<i>Thuja occidentalis</i> 'Tiny Tim'	0.5 to 1 m	0.8 to 1.5 m

2 Street trees

Index of all varieties and species as standard

Genus/species/variety	Genus/species/variety
<i>Acer buergerianum</i>	<i>Acer platanoides</i> 'Faassens' Black'
<i>Acer campestre</i>	<i>Acer platanoides</i> 'Farlake's Green'
<i>Acer campestre</i> 'Elsrijk'	<i>Acer platanoides</i> 'Globosum'
<i>Acer campestre</i> 'Fastigiatum'	<i>Acer platanoides</i> 'Royal Red'
<i>Acer campestre</i> 'Huibers Elegant'	<i>Acer platanoides</i> 'Schwedleri'
<i>Acer campestre</i> 'Nanum'	<i>Acer pseudoplatanus</i>
<i>Acer campestre</i> 'Queen Elizabeth'	<i>Acer pseudoplatanus</i> 'Erectum'
<i>Acer cappadocicum</i>	<i>Acer pseudoplatanus</i> 'Negenia'
<i>Acer cappadocicum</i> 'Aureum'	<i>Acer rubrum</i>
<i>Acer cappadocicum</i> 'Rubrum'	<i>Acer rubrum</i> 'October Glory'
<i>Acer freemanii</i> 'Armstrong'	<i>Acer rubrum</i> 'Red Sunset'
<i>Acer freemanii</i> 'Autumn Blaze'	<i>Acer rubrum</i> 'Scanlon'
<i>Acer freemanii</i> 'Celzam'	<i>Acer saccharinum</i>
<i>Acer monspessulanum</i>	<i>Acer saccharinum</i> 'Wieri'
<i>Acer negundo</i>	<i>Acer saccharinum</i> 'Pyramidale'
<i>Acer platanoides</i>	<i>Acer saccharum</i>
<i>Acer platanoides</i> 'Cleveland'	<i>Acer tataricum</i>
<i>Acer platanoides</i> 'Columnare'	<i>Aesculus carnea</i> 'Briotii'
<i>Acer platanoides</i> 'Deborah'	<i>Aesculus hippocastanum</i>
<i>Acer platanoides</i> 'Drummondii'	<i>Aesculus hippocastanum</i> 'Baumannii'
<i>Acer platanoides</i> 'Emerald Queen'	<i>Aesculus hippocastanum</i>
<i>Acer platanoides</i> 'Eurostar'	'Umbraculifera'

Genus/species/variety	Genus/species/variety
<i>Aesculus hippocastanum</i> 'Pyramidalis'	<i>Fraxinus excelsior</i> 'Westhof's Glorie'
<i>Ailanthus altissima</i>	<i>Fraxinus ornus</i>
<i>Alnus cordata</i>	<i>Fraxinus pennsylvanica</i> 'Cimmzam'
<i>Alnus glutinosa</i>	<i>Fraxinus pennsylvanica</i> 'Patmore'
<i>Alnus incana</i>	<i>Fraxinus pennsylvanica</i> 'Summit'
<i>Alnus spaethii</i>	<i>Gleditsia triacanthos</i>
<i>Amelanchier lamarckii</i>	<i>Gleditsia triacanthos</i> inermis
<i>Betula nigra</i>	<i>Gleditsia triacanthos</i> 'Shademaster'
<i>Betula pendula</i>	<i>Gleditsia triacanthos</i> 'Skyline'
<i>Betula pendula</i> 'Dalecarlica'	<i>Gleditsia triacanthos</i> 'Sunburst'
<i>Betula pendula</i> 'Fastigiata'	<i>Juglans cinerea</i>
<i>Betula pendula</i> 'Tristis'	<i>Juglans regia</i>
<i>Betula pendula</i> 'Youngii'	<i>Liquidambar styraciflua</i>
<i>Betula jacquemontii</i>	<i>Liquidambar styraciflua</i> 'Gum Ball'
<i>Carpinus betulus</i>	<i>Liquidambar styraciflua</i> 'Moraine'
<i>Carpinus betulus</i> 'Columnaris'	<i>Liquidambar styraciflua</i> 'Slender Silhouette'
<i>Carpinus betulus</i> 'Fastigiata'	<i>Liriodendron tulipifera</i>
<i>Carpinus betulus</i> 'Frans Fontaine'	<i>Liriodendron tulipifera</i> 'Fastigiatum'
<i>Castanea sativa</i>	<i>Magnolia kobus</i>
<i>Catalpa bignonioides</i>	<i>Magnolia soulangeana</i>
<i>Catalpa bignonioides</i> 'Nana'	<i>Magnolia loebneri</i> 'Merrill'
<i>Celtis australis</i>	<i>Malus</i> 'Beverly'
<i>Cercidiphyllum japonicum</i>	<i>Malus</i> 'Butterball'
<i>Cornus mas</i>	<i>Malus</i> 'Red Jewel'
<i>Corylus colurna</i>	<i>Malus baccata</i> 'Street Parade'
<i>Crataegus lavallei</i> 'Carrierei'	<i>Malus sylvestris</i>
<i>Crataegus laevigata</i> 'Paul's Scarlet'	<i>Malus floribunda</i>
<i>Crataegus monogyna</i>	<i>Malus</i> 'Hillieri'
<i>Crataegus monogyna</i> 'Stricta'	<i>Malus</i> 'Charlottae'
<i>Crataegus coccinea</i>	<i>Malus</i> 'Eleyi'
<i>Crataegus crus galli</i>	<i>Malus</i> 'Hopá'
<i>Fagus sylvatica</i>	<i>Malus</i> 'John Downie'
<i>Fagus sylvatica</i> 'Atropunicea'	<i>Malus</i> 'Liset'
<i>Fagus sylvatica</i> 'Pendula'	<i>Malus</i> 'Nicoline'
<i>Fagus sylvatica</i> 'Purpurea'	<i>Malus</i> 'Professor Sprenger'
<i>Fagus sylvatica</i> 'Pupurea Pendula'	<i>Malus</i> 'Profusion'
<i>Fagus sylvatica</i> 'Riversii'	<i>Malus</i> 'Red Sentinel'
<i>Fagus sylvatica</i> 'Swat Magret'	<i>Malus</i> 'Royalty'
<i>Fraxinus americana</i> microcarpa	<i>Malus</i> 'Rudolph'
<i>Fraxinus americana</i> 'Autumn Applause'	<i>Malus</i> 'Striped Beauty'
<i>Fraxinus americana</i> 'Autumn Purple'	<i>Malus</i> 'Van Eseltine'
<i>Fraxinus americana</i> 'Skyline'	<i>Malus</i> 'Tina'
<i>Fraxinus angustifolia</i> 'Raywood'	<i>Malus tschonoskii</i>
<i>Fraxinus excelsior</i>	<i>Morus alba</i> 'Fruitless'
<i>Fraxinus excelsior</i> 'Atlas'	<i>Morus alba</i> 'Macrophylla'
<i>Fraxinus excelsior</i> 'Diversifolia'	<i>Ostrya carpinifolia</i>
<i>Fraxinus excelsior</i> 'Geessink'	<i>Paulownia tomentosa</i>
<i>Fraxinus excelsior</i> 'Jaspidea'	<i>Parrotia persica</i>
<i>Fraxinus excelsior</i> 'Nana'	
<i>Fraxinus excelsior</i> 'Pendula'	





Height and crown diameter of 30-year-old trees 3

Genus/species/variety	Genus/species/variety
Platanus acerifolia	Quercus robur 'Fastigiata'
Platanus acerifolia 'Alphen's Globe'	Quercus robur 'Fastigiata Koster'
Platanus acerifolia 'Tremonia'	Quercus robur
Platanus orientalis	Robinia 'Casque Rouge'
Populus alba 'Nivea'	Robinia pseudoacacia
Populus balsamifera	Robinia pseudoacacia 'Bessoniana'
Populus berolinensis	Robinia pseudoacacia 'Frisia'
Populus canescens	Robinia pseudoacacia 'Sandraudiga'
Populus canadensis 'Robusta'	Robinia pseudoacacia 'Semperflorans'
Populus nigra	Robinia pseudoacacia 'Umbraculifera'
Populus nigra 'Italica'	Robinia pseudoacacia 'Monophylla'
Populus tremula	Salix alba
Populus tremula 'Erecta'	Salix alba 'Chermesina'
Prunus 'Accolade'	Salix alba 'Liempde'
Prunus avium	Salix alba 'Belders'
Prunus avium 'Plena'	Salix alba 'Tristis'
Prunus cerasifera 'Nigra'	Salix alba 'Tristis Resistenta'
Prunus fruticosa 'Globosa'	Sophora japonica
Prunus gondouinii 'Schnee'	Sophora japonica 'Regent'
Prunus maackii	Sorbus aria 'Lutescens'
Prunus maackii 'Amber Beauty'	Sorbus aria 'Magnifica'
Prunus padus	Sorbus aria 'Majestica'
Prunus padus 'Watereri'	Sorbus aucuparia
Prunus sargentii	Sorbus aucuparia 'Eduilis'
Prunus schmittii	Sorbus aucuparia 'Fastigiata'
Prunus serrulata	Sorbus aucuparia 'Sheerwater Seedling'
Prunus serrulata 'Amanogawa'	Sorbus hybrida 'Gibbsii'
Prunus serrulata 'Kiku-shidare-zakura'	Sorbus intermedia
Prunus serrulata 'Kanzan'	Sorbus intermedia 'Brouwers'
Prunus serrulata 'Pink Perfection'	Sorbus serotina
Prunus serrulata 'Shimidsu-Sakura'	Sorbus thuringiaca 'Fastigiata'
Prunus serrulata 'Shirofugen'	Sorbus vilmorinii
Prunus subhirtella 'Autumnalis'	Tilia americana 'Nova'
Prunus subhirtella 'Autumnalis Rosea'	Tilia cordata
Prunus subhirtella 'Fukubana'	Tilia cordata 'Erecta'
Prunus yedoensis	Tilia cordata 'Greenspire'
Pyrus calleryana 'Chanticleer'	Tilia cordata 'Green Globe'
Pyrus calleryana 'Bradford'	Tilia cordata 'Rancho'
Pyrus communis 'Beech Hill'	Tilia cordata 'Roelvo'
Pyrus nivalis	Tilia euclora
Pyrus regelii	Tilia europaea
Pyrus salicifolia 'Pendula'	Tilia europaea 'Pallida'
Quercus cerris	Tilia flavescens 'Glenleven'
Quercus coccinea	Tilia henryana
Quercus frainetto	Tilia mongolica
Quercus palustris	Tilia platyphyllos
Quercus palustris 'Green Dwarf'	Tilia platyphyllos 'Laciniata'
Quercus palustris 'Green Pillar'	Tilia platyphyllos 'Örebro'
Quercus petraea	Tilia platyphyllos 'Prince's Street'
Quercus robur	

Genus/species/variety	Genus/species/variety
Tilia platyphyllos 'Rubra'	Ulmus hollandica 'Groeneveld'
Tilia tomentosa	Ulmus hollandica 'Plantijn'
Tilia tomentosa 'Brabant'	Ulmus hollandica 'Lobel'
Ulmus carpinifolia	Ulmus laevis
Ulmus carpinifolia 'Wredei'	Ulmus 'Sapporo Autumn Gold'
Ulmus 'Columella'	Zelkova serrata
Ulmus glabra 'Pendula'	Zelkova serrata 'Green Vase'
Ulmus hollandica 'Commelin'	Zelkova serrata 'Village Green'
Ulmus hollandica 'Dodoens'	

3 Height and crown diameter of 30-year-old trees

These are average sizes which are far exceeded in especially favourable areas but also fallen far short in extreme conditions. Initial growth between 60-180 cm a year in the first decade cannot necessarily be projected for the next decades as the growth rate does not by any means remain constant. It should also be kept in mind that the large trees will not yet have reached their maximum sizes, while the growth of small trees is already complete.

A further group of trees, usually the medium-size, are among the fastest-growing and shortest-lived. After 30 years, they are already in their final stage and begin their dying phase.

Genus/species/variety	Height	Width
Acer buergerianum	8 to 15 m	4 to 5 m
Acer campestre	8 to 11 m	5 to 12 m
Acer campestre 'Elsrijk'	6 to 10 m	4 to 6 m
Acer campestre 'Huibers Elegant'	10 to 12 m	4 to 6 m
Acer campestre 'Nanum'	4 to 7 m	2 to 3 m
Acer campestre 'Queen Elizabeth'	10 to 12 m	6 to 8 m
Acer cappadocicum	10 to 20 m	8 to 10 m
Acer ginnala	5 to 8 m	4 to 8 m
Acer monspessulanum	6 to 10 m	4 to 10 m
Acer neglectum 'Annae'	6 to 8 m	5 to 8 m
Acer negundo	8 to 14 m	5 to 16 m
Acer negundo 'Aureo-variegatum'	5 to 8 m	5 to 7 m
Acer negundo 'Odessanum'	6 to 10 m	5 to 8 m
Acer negundo 'Variegatum'	5 to 7 m	5 to 6 m
Acer platanoides	10 to 13 m	9 to 13 m
Acer platanoides 'Globosum'	5 to 8 m	4 to 6 m
Acer platanoides 'Schwedleri'	8 to 10 m	6 to 9 m
Acer pseudoplatanus	12 to 15 m	10 to 12 m
Acer pseudoplatanus 'Erectum'	10 to 13 m	6 to 8 m
Acer pseudoplatanus 'Negenia'	12 to 15 m	6 to 8 m





3 Height and crown diameter of 30-year-old trees

Genus/species/variety	Height	Width
Acer rubrum	8 to 10 m	5 to 10 m
Acer rufrinerve	5 to 7 m	3 to 4 m
Acer saccharum	15 to 25 m	10 to 14 m
Acer saccharinum	15 to 19 m	12 to 20 m
Acer tataricum	5 to 10 m	5 to 10 m
Aesculus carnea 'Briotii'	7 to 11 m	6 to 9 m
Aesculus hippocastanum	0 to 13 m	8 to 12 m
Aesculus hippocastanum 'Baumannii'	8 to 12 m	7 to 9 m
Ailanthus altissima	10 to 12 m	9 to 13 m
Alnus cordata	9 to 12 m	3 to 6 m
Alnus glutinosa	9 to 12 m	6 to 9 m
Alnus incana	6 to 10 m	3 to 10 m
Alnus spaethii	8 to 11 m	5 to 8 m
Amelanchier lamarckii	5 to 8 m	3 to 5 m
Betula nigra	10 to 13 m	8 to 12 m
Betula papyrifera	14 to 16 m	13 to 15 m
Betula pendula	12 to 17 m	8 to 12 m
Betula pendula 'Youngii'	5 to 7 m	4 to 6 m
Betula pubescens	5 to 10 m	3 to 8 m
Betula jaquemontii	6 to 14 m	8 to 10 m
Carpinus betulus	10 to 13 m	8 to 12 m
Carpinus betulus 'Fastigiata'	9 to 12 m	8 to 10 m
Castanea sativa	12 to 15 m	8 to 12 m
Catalpa bignonioides	6 to 8 m	5 to 7 m
Catalpa bignonioides 'Nana'	4 to 6 m	2 to 4 m
Celtis australis	10 to 25 m	15 to 20 m
Cercidiphyllum japonicum	7 to 10 m	4 to 8 m
Cornus alternifolia	4 to 6 m	4 to 6 m
Cornus controversa	6 to 8 m	4 to 6 m
Cornus florida	4 to 6 m	3 to 5 m
Cornus kousa	4 to 7 m	3 to 4 m
Cornus kousa chinensis	5 to 8 m	4 to 5 m
Corylus colurna	9 to 13 m	6 to 10 m
Crataegus coccinea	5 to 7 m	3 to 6 m
Crataegus laevigata 'Paul's Scarlet'	3 to 8 m	3 to 6 m
Crataegus lavallei	5 to 10 m	3 to 8 m
Crataegus monogyna	5 to 8 m	3 to 5 m
Crataegus monogyna 'Stricta'	4 to 6 m	1 to 2 m
Crataegus persimilis 'Splendens'	5 to 7 m	3 to 5 m
Davidia involucrata vilmoriniana	5 to 8 m	6 to 8 m
Elaeagnus angustifolia	5 to 8 m	3 to 6 m
Fagus sylvatica	10 to 14 m	8 to 11 m
Fagus sylvatica 'Atropunicea'	8 to 12 m	8 to 10 m
Fraxinus americana microcarpa	12 to 15 m	8 to 10 m
Fraxinus americana 'Autumn Applause'	10 to 12 m	6 to 8 m
Fraxinus americana 'Autumn Purple'	12 to 15 m	10 to 12 m
Fraxinus americana 'Skyline'	10 to 15 m	6 to 10 m
Fraxinus excelsior	12 to 16 m	10 to 13 m
Fraxinus excelsior 'Altena'	12 to 14 m	8 to 10 m
Fraxinus excelsior 'Diversifolia'	7 to 10 m	6 to 9 m

Genus/species/variety	Height	Width
Fraxinus excelsior 'Nana'	4 to 8 m	2 to 4 m
Fraxinus excelsior 'Westhofs Glorie'	12 to 15 m	8 to 11 m
Fraxinus ornus	6 to 10 m	4 to 6 m
Fraxinus ornus 'Anita'	6 to 8 m	3 to 5 m
Fraxinus pennsylvanica 'Cimmzam'	18 to 20 m	8 to 10 m
Fraxinus pennsylvanica 'Patmore'	15 to 20 m	12 to 15 m
Fraxinus pennsylvanica 'Summit'	15 to 18 m	2 to 3 m
Ginkgo biloba	8 to 10 m	4 to 8 m
Gleditsia triacanthos	9 to 13 m	6 to 10 m
Gleditsia triacanthos inermis	8 to 13 m	6 to 10 m
Gleditsia triacanthos 'Skyline'	8 to 12 m	5 to 8 m
Juglans cinerea	18 to 25 m	8 to 10 m
Juglans regia	8 to 13 m	6 to 12 m
Koelreuteria paniculata	6 to 10 m	4 to 8 m
Laburnum watereri 'Vossii'	5 to 6 m	3 to 4 m
Liquidambar styraciflua	6 to 10 m	5 to 8 m
Liquidambar styraciflua 'Gum Ball'	3 to 8 m	2 to 4 m
Liquidambar styraciflua 'Moraine'	10 to 25 m	6 to 10 m
Liquidambar s. 'Slender Silhouette'	10 to 15 m	0,5 to 0,8 m
Liriodendron tulipifera	12 to 14 m	9 to 12 m
Lonicera maackii	4 to 6 m	4 to 6 m
Magnolia kobus	8 to 10 m	8 to 10 m
Magnolia soulangeana	3 to 8 m	3 to 6 m
Malus floribunda	5 to 8 m	4 to 8 m
Malus 'Hillieri'	5 to 8 m	4 to 8 m
Malus 'Wintergold'	5 to 8 m	4 to 8 m
Malus sylvestris	5 to 12 m	5 to 10 m
Malus 'Tina'	5 to 12 m	5 to 10 m
Malus tschonoskii	8 to 12 m	4 to 6 m
Malus 'Prof. Sprenger'	8 to 12 m	4 to 6 m
Morus alba 'Fruitless'	8 to 10 m	4 to 8 m
Morus alba 'Macrophylla'	10 to 15 m	6 to 7 m
Parrotia persica	7 to 10 m	5 to 8 m
Platanus acerifolia	12 to 16 m	11 to 16 m
Platanus acerifolia 'Alphen's Globe'	4,5 to 6,5 m	3 to 4 m
Platanus acerifolia 'Tremonia'	15 to 30 m	8 to 10 m
Platanus orientalis	25 to 35 m	15 to 25 m
Populus alba 'Nivea'	12 to 18 m	10 to 16 m
Populus balsamifera	12 to 15 m	7 to 9 m
Populus berolinensis	12 to 16 m	6 to 9 m
Populus canadensis 'Robusta'	15 to 20 m	11 to 14 m
Populus canescens	12 to 18 m	10 to 14 m
Populus nigra	20 to 30 m	15 to 20 m
Populus nigra 'Italica'	15 to 20 m	3 to 4 m
Populus simonii	12 to 15 m	6 to 10 m
Populus tremula	14 to 17 m	8 to 10 m
Populus tremula 'Erecta'	10 to 14 m	2 to 4 m
Prunus 'Accolade'	5 to 8 m	4 to 6 m
Prunus avium	10 to 13 m	7 to 11 m
Prunus avium 'Plena'	5 to 9 m	5 to 8 m





Height and crown diameter of 30-year-old trees 3

Genus/species/variety	Height	Width
Prunus cerasifera 'Nigra'	4 to 7 m	3 to 5 m
Prunus fruticosa 'Globosa'	3 to 5 m	2 to 4 m
Prunus hillieri 'Spire'	5 to 8 m	2 to 3 m
Prunus lusitanica	4,5 to 7 m	3 to 5 m
Prunus lusitanica 'Angustifolia'	4 to 6 m	2 to 4 m
Prunus padus	6 to 11 m	5 to 8 m
Prunus sargentii	6 to 12 m	4 to 8 m
Prunus serrulata 'Amanogawa'	5 to 7 m	2 to 3 m
Prunus serrulata 'Kanzan'	6 to 10 m	5 to 7 m
Prunus serrulata 'Kiku-shidare-zakura'	4 to 6 m	3 to 4 m
Prunus serrulata 'Okumiyako'	3 to 4 m	2 to 4 m
Prunus serrulata 'Shirofugen'	6 to 9 m	4 to 5 m
Prunus subhirtella 'Autumnalis'	4 to 5 m	3 to 5 m
Prunus subhirtella 'Fukubana'	3 to 6 m	2 to 4 m
Prunus triloba	2 to 3 m	2 to 3 m
Prunus yedoensis	5 to 7 m	5 to 7 m
Pterocarya fraxinifolia	10 to 13 m	10 to 18 m
Pyrus calleryana 'Chanticleer'	7 to 10 m	4 to 5 m
Pyrus nivalis	6 to 10 m	5 to 7 m
Pyrus salicifolia	4 to 5 m	3 to 4 m
Quercus cerris	8 to 12 m	6 to 8 m
Quercus coccinea	10 to 12 m	7 to 10 m
Quercus frainetto	12 to 14 m	8 to 12 m
Quercus palustris	10 to 13 m	6 to 12 m
Quercus petraea	10 to 14 m	8 to 12 m
Quercus robur	13 to 16 m	9 to 12 m
Quercus robur 'Fastigiata'	10 to 13 m	6 to 8 m
Quercus rubra	10 to 15 m	7 to 12 m
Rhus typhina	5 to 8 m	4 to 6 m
Robinia pseudoacacia	10 to 16 m	7 to 18 m
Robinia pseudoacacia 'Bessoniana'	10 to 14 m	5 to 10 m
Robinia pseudoacacia 'Sandraudiga'	10 to 14 m	7 to 10 m
Robinia pseudoacacia 'Semperflorens'	10 to 16 m	7 to 11 m
Robinia pseudoacacia 'Tortuosa'	8 to 10 m	5 to 8 m
Robinia pseudoacacia 'Umbraculifera'	4 to 6 m	4 to 6 m
Robinia pseudoacacia 'Unifolia'	8 to 13 m	5 to 8 m
Salix alba	10 to 20 m	8 to 15 m
Salix alba 'Chermesina'	9 to 15 m	9 to 15 m
Salix alba 'Liempde'	12 to 20 m	6 to 10 m
Salix alba 'Tristis'	12 to 18 m	10 to 15 m
Salix caprea	6 to 8 m	4 to 5 m
Salix daphnoides 'Praecox'	5 to 8 m	3 to 5 m
Salix matsudana 'Tortuosa'	8 to 10 m	6 to 8 m
Sophora japonica	9 to 13 m	9 to 12 m
Sophora japonica 'Regent'	9 to 13 m	8 to 10 m
Sorbus aria 'Magnifica'	8 to 12 m	4 to 6 m
Sorbus aria 'Majestica'	8 to 12 m	4 to 6 m
Sorbus aucuparia	5 to 10 m	4 to 9 m
Sorbus aucuparia 'Edulis'	8 to 12 m	5 to 10 m
Sorbus aucuparia 'Fastigiata'	5 to 7 m	4 to 6 m

Genus/species/variety	Height	Width
Sorbus auc. 'Sheerwater Seedling'	6 to 10 m	3 to 4 m
Sorbus hybrida 'Gibbsii'	5 to 7 m	3 to 4 m
Sorbus intermedia 'Brouwers'	8 to 10 m	4 to 6 m
Sorbus thuringiaca 'Fastigiata'	5 to 8 m	3 to 4 m
Sorbus vilmorinii	3 to 6 m	3 to 5 m
Sorbus vulgaris	8 to 11 m	4 to 10 m
Styrax japonicus	5 to 8 m	4 to 6 m
Styrax obassia	5 to 7 m	3 to 5 m
Tilia cordata	12 to 16 m	9 to 13 m
Tilia cordata 'Erecta'	9 to 12 m	5 to 10 m
Tilia cordata 'Greenspire'	10 to 13 m	7 to 10 m
Tilia cordata 'Green Globe'	6 to 8 m	4 to 6 m
Tilia cordata 'Roelvo'	10 to 15 m	6 to 10 m
Tilia cordata 'Winter Orange'	8 to 10 m	4 to 8 m
Tilia euclora	12 to 15 m	6 to 10 m
Tilia europaea 'Pallida'	11 to 16 m	9 to 13 m
Tilia henryana	9 to 12 m	6 to 8 m
Tilia mongolica	6 to 12 m	4 to 8 m
Tilia platyphyllos	11 to 16 m	11 to 14 m
Tilia platyphyllos 'Laciniata'	10 to 15 m	6 to 10 m
Tilia platyphyllos 'Örebro'	10 to 18 m	5 to 8 m
Tilia platyphyllos 'Prince's Street'	15 to 20 m	8 to 10 m
Tilia platyphyllos 'Rubra'	12 to 16 m	10 to 13 m
Tilia tomentosa	10 to 13 m	12 to 14 m
Tilia tomentosa 'Brabant'	10 to 14 m	8 to 10 m
Tilia vulgaris	10 to 15 m	8 to 13 m
Ulmus carpinifolia 'Wredei'	8 to 10 m	3 to 4 m
Ulmus 'Columella'	15 to 20 m	4 to 6 m
Ulmus glabra 'Pendula'	3 to 5 m	6 to 10 m
Ulmus hollandica 'Lobel'	10 to 13 m	5 to 6 m
Ulmus laevis	10 to 12 m	9 to 12 m
Ulmus 'Sapporo Autumn Gold'	12 to 15 m	5 to 7 m
Zelkova serrata	8 to 12 m	8 to 12 m





4 Bizarre Habits

4 Bizarre Habits

This group of plants with unique branching habits that produce wonderful effects when leaves have fallen. They should only be planted as lone specimens in front of a neutral background where they are not overshadowed by larger, more conspicuous plants lest their picturesque effects be lost. Their partners should be shrubs or low perennials that clearly smaller.

Genus/species/variety	Height	Width	Habit
1. Deciduous plants			
<i>Corylus avellana</i> 'Contorta'	2-4 m	2-4 m	twigs twisted like corkscrews
<i>Euonymus phellomanus</i>	1-3 m	1-3 m	asymmetrical with wing-shaped corky shoots
<i>Nothofagus antarctica</i>	4-6 m	3-4 m	twigs twisted, asymmetrical habit
<i>Robinia</i> p. 'Tortuosa'	12-15 m	6-8 m	asymmetrical crown, twigs twisted
<i>Salix matsudana</i> 'Tortuosa'	4-8 m	4-6 m	spiralling, twisted branches and twigs
<i>Salix sachalinensis</i> 'Sekka'	2-3 m	2-4 m	belt-like, somewhat twisted twigs
<i>Ulmus hollandica</i> 'Wredei'	8-10 m	3-4 m	asymmetrical funnel crown, leaves twisted
2. Conifers			
<i>Abies procera</i> 'Glauca'	15-18 m	4-6 m	asymmetrical habit, several shoots
<i>Chamaecyparis</i> 'Nana Gracilis'	2-3 m	1-2 m	twigs like fans or shells
<i>Cryptomeria</i> j. 'Cristata'	6-8 m	2-3 m	twigs tips fanned out
<i>Larix kaempferi</i> 'Diana'	5-8 m	2-3 m	twigs twisted like corkscrews
<i>Picea abies</i> 'Acrocona'	3-5 m	2-4 m	conspicuous cones
<i>Picea abies</i> 'Inversa'	5-8 m	1-2 m	twigs asymmetrically draped
<i>Picea abies</i> 'Virgata'	12-15 m	4-6 m	bizarre-asymmetrical twigs
<i>Picea orientalis</i> 'Nutans'	8-12 m	5-7 m	branches in various growth directions
<i>Picea omorika</i> 'Pendula'	8-10 m	1-2 m	hanging branches, twisted twigs

5 Conical crowns

Most conical trees gradually develop in the course of their growth from slender, symmetrically conical figures to extended, sometimes even round-crown trees with deeply set crowns. Some varieties and species do not develop round crowns with age but retain their conical habits, merely becoming broader.

Genus/species/variety	Height	Width	Habit
1. Deciduous plants			
<i>Acer campestre</i> 'Elsrijk'	8-12 m	4-6 m	broadly ovoid
<i>Acer freemanii</i> 'Celzam'	12-15 m	6-8 m	small conical
<i>Acer platanoides</i> 'Eurostar'	12-15 m	5-6 m	broadly ovoid
<i>Acer pseudoplatanus</i> 'Negenia'	20-25 m	6-8 m	domed ovoid
<i>Acer rubrum</i> varieties	7-12 m	4-7 m	broadly conical to ovoid
<i>Acer rufrinerve</i>	4-7 m	2-4 m	asymmetrically broadly conical
<i>Alnus cordata</i>	8-15 m	3-6 m	broadly conical to ovoid
<i>Alnus incana</i> varieties	8-12 m	3-6 m	asymmetrically broadly conical
<i>Alnus spaethii</i>	12-15 m	6-8 m	asymmetrically, conical
<i>Betula ermanii</i>	15-20 m	6-8 m	broadly conical
<i>Betula maximowicziana</i>	15-20 m	8-12 m	asymmetrically broadly conical
<i>Carpinus betulus</i> 'Quercifolia'	15-25 m	6-10 m	domed, broadly ovoid
<i>Cornus controversa</i>	6-8 m	4-6 m	broadly conical to round
<i>Corylus columna</i>	12-15 m	6-8 m	broadly conical to round
<i>Fagus sylvatica</i> varieties	15-25 m	10-15 m	domed to round crown
<i>Fraxinus ang.</i> 'Raywood'	15-20 m	7-10 m	broadly ovoid
<i>Fraxinus excelsior</i> varieties	20-25 m	10-15 m	broadly conical to ovoid
<i>Gleditsia triacanthos</i> 'Skyline'	12-15 m	5-8 m	loosely broadly conical
<i>Ilex aquifolium</i> (single stem)	5-10 m	3-4 m	broadly conical to ovoid
<i>Liquidambar styraciflua</i>	10-15 m	4-8 m	asymmetrically, conical
<i>Liquidambar</i> s. 'Moraine'	10-25 m	6-10 m	compact conical
<i>Liriodendron</i> t. 'Fastigiatum'	15-20 m	5-7 m	broadly vase-shaped
<i>Malus</i> 'Evereste'	4-6 m	3-5 m	broadly conical
<i>Malus tschonoskii</i>	8-12 m	3-5 m	broadly ovoid
<i>Magnolia</i> g. 'Blanchard'	6-10 m	4-6 m	asymmetrically broadly conical
<i>Nyssa sylvatica</i>	15-20 m	8-12 m	flattened crown
<i>Platanus acerifolia</i> 'Tremonia'	15-30 m	8-10 m	broadly conical to ovoid
<i>Populus berolinensis</i>	20-25 m	8-10 m	asymmetrically, domed
<i>Prunus avium</i>	15-20 m	8-12 m	broadly ovoid to round
<i>Prunus hillieri</i> 'Spire'	6-8 m	2-3 m	broadly conical to round
<i>Prunus schmittii</i>	6-12 m	3-4 m	broadly conical
<i>Pyrus calleryana</i> varieties	7-9 m	4-5 m	loose and broadly conical
<i>Pyrus communis</i>	5-15 m	5-10 m	domed crown
<i>Quercus coccinea</i>	15-20 m	8-12 m	open, loosely asymmetrical
<i>Robinia</i> p. 'Monophylla'	10-15 m	6-8 m	slenderly ovoid, domed
<i>Robinia</i> p. 'Sandraudiga'	15-20 m	8-12 m	asymmetrically broadly conical
<i>Salix alba</i> 'Liempde'	25-30 m	8-10 m	conical to domed





Genus/species/variety	Height	Width	Habit
Sophora japonica 'Regent'	10-15 m	10-12 m	broadly ovoid
Sorbus aria varieties	6-12 m	4-6 m	broadly conical
Sorbus aucuparia			
'Sheerwater Seedling'	6-10 m	3-4 m	compactly ovoid
Sorbus 'Gibbsii'	5-7 m	3-4 m	broadly conical
Sorbus intermedia varieties	8-10 m	4-6 m	extended
Sorbus thuring. 'Fastigiata'	5-8 m	3-4 m	broadly conical
Tilia cordata 'Greenspire'	12-15 m	6-12 m	broadly conical
Tilia cordata 'Rancho'	9-12 m	4-6 m	small conical
Tilia cordata 'Roelvo'	10-15 m	6-10 m	small conical
Tilia euchlora	15-18 m	7-10 m	domed and overhanging
Tilia flavescens 'Glenleven'	15-20 m	8-12 m	loosely ovoid
Tilia europaea 'Pallida'	30-40 m	10-15 m	domed to round crown
Tilia platyphyllos 'Örebro'	10-18 m	5-8 m	small conical to ovoid
Ulmus hybrids	12-15 m	5-6 m	compact to loosely conical

2. Conifers

Abies species and varieties	5-8/25-30	2-3/8-10	broadly conical to flattened
Araucaria araucana	5-7 m	3-4 m	flattened crown
Chamaecyparis species and varieties	3-4/8-10	1-2/2-4 m	broadly conical
Juniperus species and varieties	1-2/6-8 m	1-2/2-4 m	asymmetrical, loose
Larix species	25-30 m	8-10 m	broadly conical
Metasequoia glyptostroboides	20-30 m	6-8 m	loose, conical
Picea species and varieties	1-2/25-40	1-2/6-8	loose, conical
Picea pungens 'Edith'	3-3,5 m	2-3 m	broadly conical to ovoid
Pinus species and varieties	2-6/20-30	1-2/6-10	asymmetrically, conical
Pseudolarix amabilis	8-12 m	4-8 m	loosely asymmetrical
Pseudotsuga menziesii species	30-40 m	7-10 m	extendedly asymmetrical
Sciadopitys verticillata	5-8 m	3-4 m	loosely conical
Sequoiadendron giganteum	25-35 m	10-12 m	always conical
Taxodium distichum	20-25 m	5-8 m	loosely conical
Taxus baccata 'Dovastoniana'	6-8 m	4-6 m	loosely conical
Taxus baccata 'Overeynderi'	3-5 m	2-4 m	broadly ovoid
Taxus media varieties	3-5 m	2-4 m	loosely reaching all directions
Thuja species and varieties	3-5/15-20	1-2/3-5	compactly conical
Thujopsis dolabrata	5-10 m	4-8 m	broadly conical
Tsuga species	5-8/12-15	3-4/5-8	loosely asymmetrical

6 Small trees with round crowns

Round-headed trees are without exception slow-growing small trees. They form a densely branched, compact crown that gradually becomes more flattened with age, i.e. the crowns are wider than tall when old. Only then is corrective pruning necessary. Otherwise, cutting is only necessary when the crown loses its shape and falls apart. It is not necessary prune the trees every year.

Genus/species/variety	Height	Width	Flowers
Acer campestre 'Nanum'	4-7 m	2-3 m	yellow
Acer platanoides 'Globosum'	5-8 m	3-5 m	yellow
Aesculus h. 'Umbraculifera'	5-7 m	4-6 m	white
Catalpa bignonioides 'Nana'	4-6 m	2-3 m	no flowers
Fraxinus excelsior 'Nana'	3-5 m	2-3 m	no flowers
Liquidambar styraciflua 'Gum Ball'	3-8 m	2-4 m	inconspicuous
Malus toringo 'Browers Beauty'	5-6 m	5-6 m	pink-white, fragrance
Platanus acerifolia 'Alphen's Globe'	4-7 m	3-4 m	inconspicuous
Prunus fruticosa 'Globosa'	3-5 m	2-3 m	white
Quercus palustris 'Green Dwarf'	4-6 m	4-6 m	inconspicuous
Robinia p. 'Umbraculifera'	4-6 m	4-6 m	no flowers
Tilia cordata 'Green Globe'	6-8 m	4-5 m	white





7 Columnar crowns

Columnar deciduous trees are without exception cultivars as no slender tree types occur in the wild. A slender crown can be seen with young trees that want to grow up between older trees as quickly as possible. Once they have reached light, they begin to grow wider as is typical for their species. Similar behaviour, though not as pronounced, can be seen with almost all columnar trees: they change their appearance as they age, initially growing slender-columnar, and gradually widening into conical or ovoid crowns. Some even develop almost round crowns.

The naturally slender conifers behave in much the same manner. Their initially extremely slender habit gradually becomes cylindrical or even vase-shaped to barrel-shaped.

Genus/species/variety	Height	Width
1. Deciduous plants		
<i>Acer campestre</i> 'Fastigiatum'	10-12 m	2-3 m
<i>Acer freemanii</i> 'Armstrong'	10-15 m	2-3 m
<i>Acer platanoides</i> 'Columnare'	8-10 m	3-4 m
<i>Acer pseudoplatanus</i> 'Erectum'	15-20 m	6-8 m
<i>Acer saccharinum</i> 'Pyramidale'	15-20 m	6-8 m
<i>Betula pendula</i> 'Fastigiata'	15-20 m	4-6 m
<i>Carpinus betulus</i> 'Columnaris'	8-12 m	6-10 m
<i>Carpinus betulus</i> 'Fastigiata'	10-15 m	6-10 m
<i>Carpinus betulus</i> 'Frans Fontaine'	5-8 m	3-4 m
<i>Carpinus betulus</i> 'Fastigiata Monument'	4-6 m	1-1.5 m
<i>Carpinus betulus</i> 'Lucas'	8-10 m	2-3 m
<i>Fagus sylvatica</i> 'Dawyck'	15-25 m	3-6 m
<i>Fagus sylvatica</i> 'Dawyck Gold'	4-8 m	2-3 m
<i>Liquidambar styraciflua</i> 'Slender Silhouette'	10-15 m	0.5-0.8 m
<i>Malus</i> 'Van Eseltine'	4-6 m	3-4 m
<i>Malus tschonoskii</i>	8-12 m	2-4 m
<i>Populus nigra</i> 'Italica'	25-30 m	4-8 m
<i>Populus tremula</i> 'Erecta'	10-15 m	2-3 m
<i>Prunus hillieri</i> 'Spire'	6-8 m	2-3 m
<i>Prunus serrulata</i> 'Amanogawa'	4-7 m	1-4 m
<i>Pyrus communis</i> 'Beech Hill'	8-10 m	3-5 m
<i>Quercus palustris</i> 'Green Pillar'	15-20 m	4-5 m
<i>Quercus robur</i> 'Fastigiata'	25-30 m	6-10 m
<i>Robinia pseudoacacia</i> 'Pyramidalis'	6-10 m	5-8m
<i>Salix alba</i> 'Limpde'	15-20 m	3-6 m
<i>Sorbus aria</i> 'Majestica'	6-12 m	4-6 m
<i>Sorbus aucuparia</i> 'Fastigiata'	5-7 m	2-4 m
<i>Sorbus aucuparia</i> 'Sheerwater Seedling'	6-10 m	3-4 m
<i>Sorbus thuringiaca</i> 'Fastigiata'	5-8 m	3-4 m
<i>Tilia platyphyllos</i> 'Prince's Street'	12 m	5 m
<i>Ulmus</i> 'Columella'	15-20 m	4-6 m
<i>Tilia cordata</i> 'Erecta'	15-18 m	5-10 m
<i>Ulmus hollandica</i> 'Lobel'	12-15 m	4-6 m

Genus/species/variety	Height	Width
2. Conifers		
<i>Chamaecyparis lawsoniana</i> 'Alumigold'	6-8 m	2-3 m
<i>Chamaecyparis lawsoniana</i> 'Alumii'	8-10 m	2-4 m
<i>Chamaecyparis lawsoniana</i> 'Columnaris'	5-10 m	1-2 m
<i>Chamaecyparis lawsoniana</i> 'Columnaris Glauca'	5-8 m	1-2 m
<i>Chamaecyparis lawsoniana</i> 'Ellwoodii'	2-4 m	1-1,5 m
<i>Chamaecyparis lawsoniana</i> 'Ellwood's Gold'	2-3 m	0,5-1,5 m
<i>Chamaecyparis lawsoniana</i> 'Kelleriis Gold'	6-8 m	2-3 m
<i>Chamaecyparis lawsoniana</i> 'Lane'	4-7 m	2-3 m
<i>Cupressocyparis leylandii</i>	15-25 m	2-3 m
<i>Cupressocyparis leylandii</i> 'Castlewellan Gold'	7-12 m	2-4 m
<i>Juniperus chinensis</i> 'Keteleeri'	8-10 m	1,5-2 m
<i>Juniperus chinensis</i> 'Spartan'	1,5-3 m	0,8-1,2 m
<i>Juniperus communis</i> 'Hibernica'	3-4 m	1-2 m
<i>Juniperus communis</i> 'Meyer'	3-5 m	1-1,5 m
<i>Juniperus communis</i> 'Suecica'	3-4 m	1-1,5 m
<i>Juniperus communis</i> 'Vemboö'	3-5 m	0,5-0,8 m
<i>Juniperus chinensis</i> 'Blauw'	1,5-2,5 m	1-2 m
<i>Juniperus virginiana</i> 'Glauca'	6-8 m	2-4 m
<i>Juniperus scopulorum</i> 'Skyrocket'	5-7 m	0,5-1 m
<i>Juniperus scopulorum</i> 'Wichita Blue'	4-6 m	1-1,5 m
<i>Picea omorika</i>	20-25 m	2-4 m
<i>Pinus mugo</i> 'Columnaris'	2-3 m	0,8-1,2 m
<i>Pinus nigra</i> pyramidata	5-8 m	2-3 m
<i>Pinus sylvestris</i> 'Fastigiata'	4-7 m	1-2 m
<i>Taxus baccata</i> 'Fastigiata'	5-7 m	2-5 m
<i>Taxus baccata</i> 'Fastigiata Aureomarginata'	2-4 m	2-3 m
<i>Taxus baccata</i> 'Fastigiata Robusta'	3-8 m	1-2 m
<i>Taxus media</i> 'Hicksii'	3-5 m	2-4 m
<i>Thuja occidentalis</i> 'Columna'	5-8 m	1-2 m
<i>Thuja occidentalis</i> 'Holmstrup'	3-4 m	0,8-1,5 m
<i>Thuja occidentalis</i> 'Smaragd'	3-5 m	1-2 m

8 Umbrella crowns

Crowns that spread out like umbrellas are only found among fully grown trees. Young trees initially have an ovoid, conical or vase-shaped structure. Their originally slender crowns spread out with time into flatly extended to overhanging twig umbrellas.

Umbrella crowns are recommended along paths and as deciduous trees for tucked away, protected benches or small areas that need shade. Underplanting over broad areas is quite possible as only light shade is cast under the crowns.

Genus/species/variety	Height	Width	Habit development
1. Deciduous plants			
<i>Acer ginnala</i>	5-6 m	4-10 m	always extended
<i>Amelanchier lamarckii</i>	5-8 m	3-5 m	standards have broad habits
<i>Aralia elata</i>	3-5 m	2-3 m	several stems, extended





Genus/species/variety	Height	Width	Habit development
Aralia elata 'Variegata'	3-4 m	2-3 m	loosely umbrella-shaped
Betula nigra	15-20 m	6-8 m	asymmetrically umbrella-shaped
Betula pendula 'Youngii'	5-7 m	3-4 m	overhanging
Celtis australis	10-25 m	15-20 m	broadly round to umbrella-shaped
Cercis siliquastrum	4-6 m	4-6 m	always extended
Clerodendron trichotomum	2-3 m	2-3 m	loosely umbrella-shaped
Cornus officinalis	4-10 m	4-10 m	broadly extended
Crataegus lavallei 'Carrierei'	5-8 m	3-5 m	asymmetrically umbrella-shaped
Crataegus crus galli	5-7 m	3-5 m	crown flattened
Euodia hupehensis	6-12 m	6-10 m	somewhat umbrella-shaped
Gleditsia triacanthos	15-25 m	8-10 m	asymmetrically umbrella-shaped
Hamamelis virginiana	4-7 m	3-5 m	umbrella-shaped as small tree
Koeleruteria paniculata	6-8 m	4-8 m	initially round crown
Lonicera maackii	4-6 m	4-6 m	always extended
Magnolia loebneri			
'Leonard Messel'	3-6 m	3-8 m	extremely broad
Malus 'Hillieri'	4-8 m	4-6 m	initially domed
Mespilus germanica	3-5 m	3-5 m	broadly extended
Parrotia persica	5-7 m	5-7 m	umbrella-shaped standard
Paulownia tomentosa	8-15 m	8-15 m	initially broadly round
Phellodendron amurense	10-12 m	10-12 m	spread out greatly
Prunus avium 'Plena'	7-12 m	4-6 m	initially round crown
Prunus sargentii	5-7 m	4-6 m	initially conical
Prunus serrulata 'Kanzan'	7-10 m	4-6 m	initially funnel-shaped
Prunus serrulata 'Shimidsu'	2-3 m	2-4 m	flatly umbrella-shaped
Prunus subhirtella			
'Fukubana'	2-4 m	2-4 m	initially broadly funnel-shaped
Quercus pontica	4-6 m	3-4 m	only hints of umbrella crown
Rhus typhina	3-5 m	3-5 m	bizarre umbrella crown
Robinia pseudo. 'Tortuosa'	12-15 m	6-8 m	bizarre, somewhat umbrella-shaped
Sophora japonica 'Pendula'	5-8 m	5-8 m	overhanging umbrella
Sorbus serotina	5-10 m	5-8 m	initially conical
Sorbus vilmorinii	3-6 m	3-5 m	funnel to umbrella crown
Zelkova serrata i.S.	8-12 m	8-12 m	broadly extended, vase-shaped

2. Conifers

Araucaria araucana	5-7 (10) m	3-4 m	flattened when old
Cedrus libani	15-20 m	6-15 m	flat like a board
Pinus densiflora 'Pumila'	2-3 m	1.5-2.5 m	compact umbrella crown
Pinus nigra austriaca	20-25 m	6-10 m	flattened when old
Pinus sylvestris	10-30 m	5-10 m	asymmetrically umbrella-shaped
Pinus sylvestris 'Norske Typ'	8-12 m	6-8 m	asymmetrically umbrella-shaped

9 Draping plants

Plants with overhanging, draping shoots are occasionally sought out for special beds, such as those on along tops of walls and stairways, in pots on balconies, on embankments or in roof gardens as overhanging curtains.

In exposed areas, sensitivities typical of the species can turn into true weaknesses. Plants in such areas are more sensitive to heat, drought, and frost and thus more susceptible to pests. The length of the draping is only reached under optimal conditions and are not comparable to the shrub size the plant would reach in a bed on level ground.

Note:

The plants are planted diagonal to the slope, not upright as in normal beds.

Genus/species/variety	Length of draping
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1. Deciduous plants

Buddleja alternifolia	2-3 m
Betula pendula 'Youngii'	3-5 m
Cotoneaster dammeri 'Cardinal'	0.5-1.2 m
Cotoneaster dammeri 'Coral Beauty'	1.2-2 m
Cotoneaster dammeri radicans	0.5-0.7 m
Cotoneaster dammeri 'Skogholm'	2-5 m
Cotoneaster dammeri 'Winterjuwel'	1.2-2 m
Cytisus beanii	0.5-0.8 m
Cytisus decumbens	0.3-0.5 m
Cytisus kewensis	0.5-1 m
Daphne cneorum	0.3-0.5 m
Deutzia kalmiflora	0.5-1 m
Euonymus fortunei 'Coloratus'	0.8-1.5 m
Euonymus fortunei 'Dart's Blanket'	1-2 m
Euonymus fortunei radicans	0.8-1.5 m
Forsythia 'Lynwood'	2-3 m
Forsythia 'Spectabilis'	2-3 m
Forsythia suspensa fortunei	3-5 m
Jasminum nudiflorum	2-5 m
Lespedeza thunbergii	2-4 m
Lycium barbarum	3-4 m
Potentilla 'Goldfinger'	0.3-0.8 m
Potentilla 'Goldstar'	0.3-0.5 m
Potentilla 'Goldteppich'	0.3-0.8 m
Prunus subhirtella 'Pendula'	2-3 m
Pyrus salicifolia	2-3 m
Pyrus salicifolia 'Pendula'	2-3 m
Rosa - Ground Cover Roses	0.5-2 m
Rosa arvensis	1-2 m
Rosa multibracteata	1-1.5 m
Rosa multiflora	1.2-3 m
Rubus caesius	1-3 m
Rubus calycinoides	0.5-1 m
Rubus fruticosus	2-3 m
Salix caprea 'Pendula'	1-2 m





9 Draping plants

Genus/species/variety	Length of draping
<i>Salix purpurea</i> 'Pendula'	1-2 m
<i>Spiraea thunbergii</i>	0.5-1.2 m
<i>Spiraea trilobata</i>	1-1.5 m
<i>Spiraea vanhouttei</i>	1-1.5 m
<i>Stephanandra incisa</i> 'Crispa'	0.5-1.5 m
<i>Symphoricarpos chenaultii</i> 'Hancock'	1-3 m
<i>Tamarix parviflora</i>	1-2 m
<i>Vaccinium macrocarpon</i>	0.3-0.8 m

2. Climbers

<i>Akebia quinata</i>	1-2 m
<i>Aristolochia macrophylla</i>	2-3 m
<i>Celastrus orbiculatus</i>	2-3 m
<i>Clematis</i> species and varieties	1-3 m
<i>Hedera colchica</i>	1-2 m
<i>Hedera helix</i>	2-5 m
<i>Hydrangea petiolaris</i>	1-2 m
<i>Jasminum nudiflorum</i>	2-5 m
<i>Lonicera</i> species and varieties	1-3 m
<i>Parthenocissus quinquefolia</i> varieties	4-6 m
<i>Polygonum aubertii</i>	2-3 m
Rosa - Climbers	1-2 m
<i>Rubus fruticosus</i>	1-2 m
<i>Rubus henryi</i>	1-2 m
<i>Vitis coignetiae</i>	2-4 m

3. Conifers

<i>Cedrus atlantica</i> 'Glauca Pendula'	2-4 m
<i>Cedrus deodara</i> 'Pendula'	2-3 m
<i>Juniperus communis</i> 'Hornibrookii'	0.5-1 m
<i>Juniperus communis</i> 'Repanda'	0.5-1 m
<i>Juniperus horizontalis</i> 'Prince of Wales'	1-1.5 m
<i>Juniperus horizontalis</i> 'Wiltonii'	0.5-1 m
<i>Juniperus sabina</i> 'Tamariscifolia'	0.5-1 m
<i>Taxus baccata</i> 'Repandens'	0.3-0.5 m
<i>Tsuga canadensis</i> 'Pendula'	1-2 m

10 Overhanging crown/weeping forms

As a rule, the hanging varieties are specimens, i.e. plants that stand alone as they are useful for impressive plant imagery. They are troublesome when planted incorrectly, such as in traffic zones.

Their special crowns require sufficient space from other partners their size or larger. Plant partners have to subordinate their development lest the hanging varieties lose their characteristic effects. Underplanting is difficult due to the shade; robust, shade-tolerant shrubs or perennials are recommended.

Genus/species/variety	Height	Width	Habit development / special characteristics
1. Deciduous plants			
<i>Acer saccharinum</i> 'Wieri'	12-15 m	8-15 m	branches and twigs asymmetrically overhanging
<i>Alnus glutinosa</i> 'Imperialis'	6-10 m	4-6 m	loosely overhanging branches, bamboo-like
<i>Betula pendula</i> 'Darlecarlica'	15-20 m	6-8 m	branches and twigs loosely overhanging
<i>Betula pendula</i> 'Tristis'	10-22 m	6-8 m	twigs draping
<i>Betula pendula</i> 'Youngii'	5-7 m	3-5 m	umbrella crown, twigs hanging to the ground
<i>Caragana arborescens</i> 'Pendula'	1-3 m	1-1,5 m	twigs draping
<i>Cotoneaster dammeri</i> 'Skogholm'	1-1,5 m	1,5-2 m	draping 3-5 m
<i>Cotoneaster watereri</i> 'Pendulus'	2-3 m	1-2 m	twigs draping
<i>Fagus sylvatica</i> 'Pendula'	15-20 m	15-20 m	main branches arching, twigs draped
<i>Fagus sylvatica</i> 'Purple Fountain'	7-11 m	4-5 m	loosely overhanging
<i>Fagus sylvatica</i> 'Purpurea Pendula'	8-12 m	4-6 m	arching overhanging
<i>Forsythia suspensa fortunei</i>	2-3 m	2-3 m	twigs draping
<i>Fraxinus excelsior</i> 'Pendula'	8-10 m	6-8 m	umbrella crown, twigs draping
<i>Prunus serrulata</i> 'Kiku-shidare-zakura'	4-6 m	3-4 m	bell-shaped crown, twigs hanging limply
<i>Pyrus salicifolia</i>	4-7 m	3-4 m	loosely overhanging branches, twigs draped
Rosa - Tree Roses	1-1,5 m	1-1,5 m	twigs draping
<i>Salix acutifolia</i> 'Pendulifolia'	4-6 m	4-6 m	funnel crown, twigs tilting
<i>Salix caprea</i> 'Pendula'	1-2 m	1-2 m	bell-shaped crown, twigs draped
<i>Salix alba</i> 'Tristis'	15-20 m	12-15 m	branches and twigs draped
<i>Salix purpurea</i> 'Pendula'	0,5-1 m	1-2 m	grows normally upright when cut radically
<i>Sophora japonica</i> 'Pendula'	5-8 m	5-8 m	twigs draping
<i>Ulmus glabra</i> 'Pendula'	3-5 m	6-10 m	branches horizontal, twigs tilting





Genus/species/variety	Height	Width	Habit development / special characteristics
2. Conifers			
Cedrus atlantica			
'Glauca Pendula'	5-8 m	5-8 m	crown asymmetrically extended
Cedrus deodara 'Pendula'	3-5 m	3-5 m	asymmetrical umbrella crown, twigs draped
Chamaecyparis nootkatensis 'Pendula'	8-12 m	3-5 m	crown asymmetrically conical twigs draped
Larix kaempferi 'Pendula'	7-10 m	2-3 m	crown asymmetrically conical, top and branches arching
Picea abies 'Inversa'	5-8 m	1-2 m	columnar, top, branches and twigs draped
Picea breweriana	10-15 m	4-6 m	not weeping, conical crown, branches horizontal twigs draped
Picea omorika 'Pendula'	8-10 m	1-2 m	branches dense, twisted hanging
Picea orientalis 'Nutans'	8-12 m	5-7 m	branches in various directions
Taxus baccata 'Dovastoniana'	2-6 m	4-8 m	trained flat: twigs liling, trained upright: twigs hanging
Taxus baccata 'Dovastonii Aurea'	3-5 m	2-5 m	branches horizontal, twigs overhanging
Tsuga canadensis 'Pendula'	3-4 m	3-4 m	compact and squat

11 Fast growing plants

Plants are not fast-growing for their entire lifespan but rather only for a limited period. Some species grow very little in the first 5 years and then begin to grow strongly for the next 10-20 years; others immediately develop very long yearly shoots after planting only to stagnate growth afterwards. There are no set rules as to when a species should be considered fast-growing. The growth rate depends on soil conditions: heavy, nutritious, fresh to moist soil increases growth. The rate of growth should be seen in the context of similar species of the same genus or categories of use.

Fast growth often means: large-pore wood, short-lived elasticity with increasing brittleness and early signs of agening.

Extremely fast-growing plants are also known to be the very shortest-lived species. It does not pay to treat such plants surgically after large branches have broken off or the stem has been wounded. In high traffic areas, damaged plants should be removed quickly. If a damaged plant is in a low traffic area and its not a danger or hinderance, fungi, insects, birds, small animals, etc. should be allowed to settle around it in the interest of preserving the biological cycle.

Note:

Only the length of the yearly shoots are listed; for the slow growth when old, see the individual listings. The brittleness only concerns older trees, not young plants still growing!

Genus/species/variety	Yearly shoots	Life expectancy	Brittleness
1. Deciduous plants			
Acer freemanii			
varieties	80-120 cm	40-80 Years	moderate
Acer ginnala	30-50 cm	25-30 Years	low
Acer negundo			
varieties	100-150 cm	30-50 Years	very high
Acer platanoides			
varieties	80-120 cm	70-120 Years	low
Acer pseudoplatanus			
varieties	80-130 cm	150-400 Years	none
Acer saccharinum			
varieties	80-120 cm	40-80 Years	very high
Ailanthus altissima	80-200 cm	40-90 Years	high
Alnus incana	30-60 cm	40-50 Years	moderate
Alnus spaethii	50-100 cm	50-70 Years	moderate
Betula maximowicziana	60-80 cm		low
Betula nigra	60-90 cm	50-75 Years	moderate
Betula papyrifera	45-70 cm	60-75 Years	low
Betula pendula	60-90 cm	70-100 Years	high
Cornus alba	80-150 cm	20-30 Years	low
Cornus stolonifera			
'Flaviramea'	80-150 cm	20-30 Years	none
Cotoneaster dammeri			
'Skogholm'	80-150 cm	20-30 Years	none
Forsythia intermedia			
varieties	80-120 cm	25-40 Years	low
Fraxinus americana			
varieties	60-80 cm		low
Fraxinus excelsior var.	80-100 cm	150-250 Years	none
Gleditsia triacanthos			
varieties	60-100 cm	100-125 Years	high
Juglans nigra	60-90 cm	150-250 Years	low
Liquidambar styraciflua	45-80 cm	150-300 Years	none
Liriodendron tulipifera	45-80 cm	125-175 Years	very high
Malus tschonoskii	30-50 cm	50-75 Years	low
Morus nigra	60-80 cm	50-75 Years	high
Paulownia tomentosa	100-200 cm	40-60 Years	high
Phyllostachys species			
and varieties	300-500 cm	70-90 Years	none
Platanus acerifolia	60-80 cm	150-250 Years	low
Platanus a. 'Tremonia'	60-80 cm		low
Populus alba varieties	80-120 cm	150-300 Years	high
Populus balsamifera	100-150 cm	60-75 Years	very high
Populus berolinensis	60-100 cm	60-80 Years	very high
Populus canescens	80-100 cm	60-80 Years	very high
Populus canadensis			
'Robusta'	100-150 cm	50-70 Years	very high
Populus nigra	100-120 cm	60-80 Years	very high
Populus simonii	60-80 cm	30-50 Years	very high





11 Fast growing plants

Genus/species/variety Yearly shoots Life expectancy Brittleness

1. Deciduous plants

Populus tremula	60-80 cm	30-50 Years	very high
Prunus avium	50-60 cm	60-80 Years	moderate
Prunus serotina	45-75 cm	125-175 Years	low
Quercus coccinea	45-60 cm	200-300 Years	low
Quercus rubra	45-65 cm	150-300 Years	low
Quercus palustris	60-75 cm	125-175 Years	low
Rhus glabra	60-90 cm	15-30 Years	high
Rhus typhina	80-150 cm	30-50 Years	very high
Robinia pseudoacacia varieties	60-150 cm	75-100 Years	high
Salix species and varieties	50/100/150 cm	20-100 Years	very high
Sambucus canadensis	80-120 cm	15-20 Years	high
Sophora japonica 'Regent'	60-80 cm	50-100 Years	high
Sorbus aucuparia	50-80 cm	30-80 Years	moderate
Symphoricarpos chenaultii 'Hancock'	80-120 cm	25-40 Years	none
Tilia americana 'Nova'	45-60 cm	100-150 Years	high
Tilia europaea 'Pallida'	40-70 cm	200-300 Years	moderate
Tilia flavescens 'Glenleven'	45-80 cm		high
Ulmus carpinifolia	40-80 cm	150-200 Years	low
Ulmus 'Sapporo Autumn Gold'	60-80 cm	80-100 Years	low
Zelkova serrata 'Green Vase'	60-80 cm		low

2. Climbers

Actinidia arguta	150-300 cm		low
Actinidia chinensis	100-120 cm		none
Akebia quinquefolia	80-150 cm		none
Aristolochia macrophylla	150-200 cm		none
Campsis radicans	150-300 cm		low
Celastrus orbiculatus	70-300 cm		low
Clematis vitalba	150-300 cm		low
Lonicera henryi	100-300 cm		none
Lonicera tellmanniana	80-150 cm		none
Parthenocissus quinquefolia varieties	90-120 cm		low
Parthenocissus tricuspidata 'Veitchii'	100-250 cm		none
Polygonum aubertii	150-500 cm		low
Rosa - Climbing Roses	120-250 cm		none
Vitis coignetiae	150-300 cm		low
Wisteria floribunda	100-300 cm		low
Wisteria sinensis	150-400 cm	100-150 Years	moderate

Genus/species/variety Yearly shoots Life expectancy Brittleness

3. Conifers

Larix decidua	40-70 cm	400-600 Years	none
Larix kaempferi	50-100 cm	200-300 Years	low
Metasequoia			
Metasequoia glyptostroboides	80-120 cm	50-400 Years	moderate
Pinus banksiana	60-90 cm	40-60 Years	high
Pinus nigra austriaca	60-90 cm	300-500 Years	none
Pinus strobus	50-70 cm	150-250 Years	low
Thuja occidentalis	35-60 cm	200-400 Years	high

12 Conspicuously flowering trees and shrubs

Most trees flower only after they have reached a certain age and most begin to form flowers only after 10-15 years, i.e. if you do not want to wait years for flowers you will have to plant large specimen.

Only the main colours are listed; for colour nuances, see the detailed descriptions.

Explanation of symbols: F = pleasant, somewhat strong fragrance / (F) = pungent, somewhat unpleasant scent
f = slight fragrance / I-XII = Month of flowering (January to December)

Genus/species/variety Flower colour Fragrance Flowering time

1. Large trees

Acer platanoides varieties	yellow	F	IV
Aesculus hippocastanum	white		V
Betula maximowicziana	catkins		III-IV
Castanea sativa	white	(F)	VI/VII
Liriodendron tulipifera varieties	yellow		VI
Robinia pseudoacacia varieties	white	F	V/VIII
Tilia cordata	yellow	F	VI
Tilia platyphyllos varieties	yellow	F	V/VII
Tilia tomentosa varieties	yellow	F	VII
Tilia europaea varieties	yellow	F	VI

2. Medium-size trees

Acer freemanii 'Armstrong'	red	F	III-IV
Acer platanoides varieties	yellow	F	IV
Acer rubrum varieties	red	F	III/IV





Conspicuously flowering trees and shrubs 12

Genus/species/variety	Flower colour	Fragrance	Flowering time
Aesculus flava 'Vestita'	yellow		V-VI
Aesculus hippocastanum varieties	white, double		V
Alnus spaethii	catkins		II/III
Betula ermanii	catkins		IV
Betula maximowicziana	catkins		III-IV
Betula jaquemontii	catkins		IV
Cladrastis kentukea	white	F	V-VI
Corylus columna	yellow		IIIIV
Davidia involucrata vilmoriniana	white		V/VI
Euodia hupehensis	white	(F)	VII/VIII
Gleditsia triacanthos varieties	white	f	VI/VII
Gymnocladus dioicus	white	f	VI
Magnolia grandiflora 'Blanchard'	white	F	VII-VIII
Paulownia tomentosa	blue	f	IV
Prunus avium	white	F	IV/V
Pyrus calleryana varieties	white	(F)	IV/V
Pyrus communis	white	(F)	IV
Robinia pseudoacacia varieties	white	F	V/VIII
Sophora japonica varieties	white		VII/VIII
Sorbus aucuparia varieties	white	(F)	V/VI
Sorbus domestica	white	(F)	V/VI
Sorbus intermedia	white	(F)	V/VI
Sorbus torminalis	white	(F)	V/VI
Tilia americana 'Nova'	yellow	F	VII
Tilia cordata varieties	yellow	F	VI
Tilia euchlora	yellow	F	VI
Tilia flavescens 'Glenleven'	yellow	F	VI/VII
Tilia henryana	yellow	F	VII-IX

3. Small trees

Small trees have two basic types::

- single-stem standards and
- multi-stem, short-stem specimen that exceed the category „large shrubs“ in size (cf. individual descriptions)

Acer ginnala	greenish white		V
Acer rubrum varieties	red	F	III/IV
Aesculus carnea 'Briotii'	red		V
Amelanchier laevis	white		IV
Amelanchier lamarckii varieties	white		IV
Aralia elata varieties	white		VIII/IX
Betula albosinensis	catkins		IV
Catalpa bignonioides varieties	white		VII
Cercis siliquastrum	pink	F	IV
Clerodendron trichotomum fargesii	white	F	VII/IX
Cornus alternifolia	white		VI
Cornus controversa	white		VI
Cornus florida varieties	white		V
Cornus florida rubra	pink		VI

Genus/species/variety	Flower colour	Fragrance	Flowering time
Cornus kousa varieties	white		VI
Cornus nuttallii varieties	white		V/VI, VIII
Crataegus laevigata	white	(F)	V
Crataegus laevigata 'Paul's Scarlet'	pink, double		V/VI
Crataegus lavallei 'Carrierei'	white	(F)	VI
Crataegus monogyna varieties	pink	(F)	V
Crataegus coccinea	white	(F)	V
Crataegus crus galli	white		V
Davidia involucrata vilmoriniana	white		V/VI
Elaeagnus angustifolia	silver-yellow	F	VI
Euodia hupehensis	white	(F)	VII/VIII
Fraxinus ornus varieties	white	F	VI(VII)
Halesia carolina	white		IV/V
Koelreuteria paniculata	yellow		VIII
Laburnum anagyroides	yellow	F	V
Laburnum watereri 'Vossii'	yellow	F	V
Lonicera maackii	white	F	V/VI
Magnolia kobus	white	F	IV/V
Magnolia loebneri varieties	white, pink	F	IV(V)
Magnolia soulangeana varieties	pink	F	IV
Malus floribunda	pinkwhite	F	V
Malus varieties	white, pink	F	V
Malus sylvestris	white	F	IV/V
Malus toringo sargentii-seedling	white	F	V
Malus tschonoskii	white	F	V
Malus varieties white	pink, red	F	V
Parrotia persica	orange		III/IV
Prunus avium 'Plena'	white, double		IV
Prunus cerasifera varieties	pink		IV
Prunus fruticosa 'Globosa'	white		IV
Prunus gondouinii 'Schnee'	white	f	IV/V
Prunus hillieri 'Spire'	pink		IV
Prunus maackii varieties	white		V
Prunus padus varieties	pink	(F)-F	IV/V
Prunus sargentii	pink		IV
Prunus schmittii	pink-white		IV/V
Prunus serotina	white		VI
Prunus subhirtella varieties	pink, double		IV
Prunus yedoensis	white	F	IV
Pyrus calleryana varieties	white	(F)	IV
Pyrus communis varieties	white	(F)	IV/V
Pyrus regelii	white	(F)	IV
Robinia 'Casque Rouge'	crimson-red	f	VI
Robinia pseudoacacia varieties	white	F	VI
Salix caprea varieties	catkins	F	III/IV
Salix daphnoides varieties	catkins	F	II/III
Salix smithiana	catkins	F	III/IV
Sorbus americana	white	(F)	V/VI
Sorbus aria varieties	white	(F)	V
Sorbus arnoldiana	white	(F)	V





12 Conspicuously flowering trees and shrubs

Genus/species/variety	Flower colour	Fragrance	Flowering time
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3. Small trees

Sorbus aucuparia varieties	white	(F)	V
Sorbus decora	white	(F)	V/VI
Sorbus 'Joseph Rock'	white		V
Sorbus torminalis	white	(F)	V/VI
Stewartia pseudocamellia	white		VII/VIII
Tilia mongolica	yellow	F	VI-VII

4. Large shrubs

Acer ginnala	greenish white		V
Aesculus parviflora	white		VII/VIII
Amelanchier laevis	white	f	IV/V
Amelanchier lamarckii	white		IV
Amelanchier 'Ballerina'	white		IV
Aralia elata varieties	white		VIII/IX
Berberis julianae	yellow	(F)	V
Berberis ottawensis varieties	yellow	(F)	V
Buddleja davidii varieties	white, pink	F	VIII/IX
Caragana arborescens	yellow		V
Cercis canadensis	pink		IV-V
Cercis siliquastrum	pink, carmine		IV
Chionanthus virginicus	white		VI
Clerodendron t. fargesii	white	F	VII/VIII
Cornus alternifolia	white	(F)	V/VI
Cornus controversa	white		V/VI
Cornus florida varieties	white		V
Cornus florida rubra	pink		V/VI
Cornus kousa varieties	white, pink		VI
Cornus mas	yellow		III
Cornus nuttallii varieties	white		V/VI, VIII
Cornus officinalis	yellow		II-III
Cornus sanguinea	white	(F)	V/VI
Corylus avellana	catkins		III
Corylus 'Redblättrige Zellernuß'	catkins		III
Corylus maxima 'Purpurea'	catkins		III
Cotinus coggygria varieties	greenish white		VI
Cotoneaster bullatus	white	(F)	V
Cotoneaster watereri 'Cornubia'	white	(F)	V
Crataegus laevigata	white	(F)	V
Crataegus laevigata 'Paul's Scarlet'	pink-red		V/VI
Crataegus lavalleyi 'Carrierei'	white	(F)	VI
Crataegus monogyna	white	(F)	V/VI
Crataegus coccinea	white	(F)	V
Deutzia magnifica	white		V/VI
Deutzia scabra varieties	pink-white		V/VI
Elaeagnus angustifolia	silver-yellow		V/VI

Explanation of symbols: F = pleasant, somewhat strong fragrance /
 (F) = pungent, somewhat unpleasant scent
 f = slight fragrance / I-XII = Month of flowering (January to December)

Genus/species/variety	Flower colour	Fragrance	Flowering time
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Elaeagnus commutata	silvery-yellow		V
Forsythia intermedia varieties	yellow		III/IV
Halesia carolina	white		IV/V
Hamamelis intermedia varieties	yellow, orange, red	F	XII/II/III/IV
Hamamelis mollis varieties	yellow, orange	F	XII/II/III
Hamamelis virginiana	yellow	f	XI/XII
Heptacodium miconioides	white	F	VIII-X
Laburnum anagyroides	yellow		V
Laburnum watereri 'Vossii'	yellow	f	V
Lonicera maackii	white-light-yellow		D V/VI
Magnolia liliiflora varieties	crimsonpink		IV
Magnolia loebneri varieties	white	F	IV/V
Magnolia sieboldii	white	F	VI/VII
Magnolia soulangeana	pink, white	f	IV/V
Magnolia stellata varieties	white, pink	F	IV/V
Malus varieties	white, pink, red	F	V
Malus toringo sargentii-seedling	white	F	V
Mespilus germanica	white		V/VI
Parrotia persica	orange		III/IV
Philadelphus inodorus grandiflorus	white		V/VI
Philadelphus 'Virginal'	white	F	V/VI
Photinia villosa	white	(F)	VI
Prunus cerasifera varieties	pink		IV
Prunus laurocerasus varieties	white	(F)	V/VI/VII
Prunus lusitanica	white	(F)	VI
Prunus padus	white	(F)-F	IV
Prunus padus 'Watereri'	white	(F)-F	IVV
Prunus sargentii	pink	f	IV
Prunus 'Accolade'	pink		IV
Prunus serotina	white		VI
Prunus serrulata varieties	pink		IV/V
Prunus serrulata 'Kiku-shidare-zakura'	dark-pink		V
Prunus subhirtella 'Autumnalis'	white		X/IV
Prunus subhirtella 'Autumnalis Rosea'	pink, crimson		X/IV
Prunus subhirtella varieties	pink		III/IV
Prunus yedoensis	white	f	(III)IV
Ptelea trifoliata	yellow-green	f	VI
Pyracantha hybrids	white	(F)	V/VI
Rhododendron species and varieties		all	III/VI
Robinia hispida varieties	pink	F	VI
Rosa species and varieties all		F	V
Salix acutifolia 'Pendulifolia'	catkins	f	(I/II)III
Salix aurita	catkins	f	III/IV
Salix caprea varieties	catkins	f	(II)III
Salix cinerea	catkins	f	III/IV
Salix daphnoides 'Praecox'	catkins	f	(XII)II/III
Salix sachalinensis 'Sekka'	catkins	f	IV





Conspicuously flowering trees and shrubs 12

Genus/species/variety	Flower colour	Fragrance	Flowering time	Genus/species/variety	Flower colour	Fragrance	Flowering time
<i>Salix smithiana</i>	catkins	f	III/IV	<i>Deutzia kalmii</i> flora	light-pink		V/VI
<i>Salix viminalis</i>	catkins	f	III/IV	<i>Deutzia lemoinei</i>	white		V
<i>Sambucus canadensis</i> varieties	white	(F)	VI/VII	<i>Elaeagnus multiflora</i>	light-yellow	F	V
<i>Sambucus nigra</i>	white	(F)	VI/VII	<i>Enkianthus campanulatus</i>	red-green		III/IV
<i>Sorbus koehneana</i>	white	(F)	V/VI	<i>Enkianthus perulatus</i>	white		V
<i>Sorbus vilmorinii</i>	white	(F)	V/VI	<i>Forsythia 'Lynwood'</i>	yellow		IV/V
<i>Staphylea colchica</i>	white	F	V	<i>Forsythia suspensa fortunei</i>	yellow		IV/V
<i>Stewartia pseudocamellia</i>	white		VII/VIII	<i>Fothergilla major</i>	white	F	IV/V
<i>Styrax japonicus</i>	white	F	VI-VII	<i>Hamamelis intermedia</i> varieties	yellow, orange, red	F	XII/II/III/IV
<i>Styrax obassia</i>	white	F	VI-VII	<i>Hibiscus syriacus</i> varieties	blue, purple, red, carmine, white		VI/IX
<i>Syringa chinensis</i> varieties	purple-pink	F	IV/V	<i>Holodiscus discolor ariifolius</i>	white		VI
<i>Syringa hyacinthiflora</i> varieties	pink, crimson	F	IV/V	<i>Hydrangea macrophylla</i> varieties	blue, red, white		VII/VIII
<i>Syringa josikaea</i>	violet	(F)	V/VI	<i>Hydrangea paniculata</i> varieties	white, pink		VII/IX
<i>Syringa prestoniae</i>	crimson-red	(F)	V	<i>Hydrangea sargentiana</i>	white, light-purple		VII/VIII
<i>Syringa reflexa</i>	pink	(F)	VI/VII	<i>Kalmia latifolia</i>	carmine-pink		V/VI
<i>Syringa swegiflexa</i>	carmine pink	(F)	VI/VII	<i>Kerria japonica 'Pleniflora'</i>	yellow		IV/V
<i>Syringa vulgaris</i>	purple		V	<i>Kolkwitzia amabilis</i>	pink		VI
<i>Syringa vulgaris</i> hybrids	blue, purple, white, red, pink violet, double	F	V	<i>Lespedeza thunbergii</i>	crimson-pink		IX/X
<i>Tamarix parviflora</i>	pink		V/VI	<i>Lonicera korolkowii zabelii</i>	pink	F	VI
<i>Viburnum lantana</i>	white	(F)	V	<i>Lonicera ledebourii</i>	yellow		VI/VII
<i>Viburnum opulus</i>	white		V/VI	<i>Lonicera purpusii 'Winter Beauty'</i>	white	F	(XII) II-III
<i>Viburnum opulus 'Roseum'</i>	white		V/VI	<i>Lonicera tatarica</i> varieties	pink, white		V/VI
<i>Viburnum rhytidophyllum</i>	white	(F)	V	<i>Lonicera xylosteum</i>	white, yellow	F	V
5. Normal shrubs				<i>Magnolia liliiflora</i> varieties	pink, white		IV/VI
<i>Amelanchier ovalis</i>	white	(F)	V	<i>Magnolia stellata</i> varieties	white, pink	F	IV
<i>Aronia melanocarpa 'Viking'</i>	white		IV/V	<i>Mahonia bealei</i>	yellow	F	II/III
<i>Berberis julianae</i>	yellow	(F)	V	<i>Malus toringo sargentii-grafted</i>	white	F	IV
<i>Berberis ottawensis</i> varieties	yellow	(F)	V	<i>Osmanthus heterophyllus</i>	white	F	IX/X
<i>Berberis stenophylla</i>	yellow	(F)	V	<i>Philadelphus coronarius</i>	white	F	V/VI
<i>Berberis thunbergii</i> varieties	yellow	(F)	V	<i>Philadelphus Hybrid</i> varieties	white	F	VI/VII
<i>Berberis vulgaris</i>	yellow	(F)	V	<i>Photinia fraseri 'Red Robin'</i>	white	(F)	V/VI
<i>Buddleja alternifolia</i>	purple	F-(F)	VI	<i>Physocarpus opulifolius</i>	pink-white		V/VII
<i>Buddleja davidii</i> varieties	purple-blue, red, violett, white	F-(F)	VII/IX	<i>Pieris japonica</i> varieties	white, pink		III)IV/V
<i>Calycanthus floridus</i>	red-brown	F	V/VI	<i>Prunus kurilensis 'Brillant'</i>	white		III/IV
<i>Chaenomeles</i> hybrids	white, pink, orange, red		IV/V	<i>Prunus laurocerasus</i> varieties	white	(F)	V/VI(IX)
<i>Chaenomeles speciosa</i>	red-orange		III/IV	<i>Prunus serrulata 'Shimidsu'</i>	pink-white		V
<i>Clethra alnifolia</i>	white	F	VII/IX	<i>Prunus spinosa</i>	white	f	IV
<i>Colutea arborescens</i>	yellow		V/IX	<i>Prunus triloba</i>	pink, double		
<i>Corylopsis spicata</i>	light-yellow	F	IV	<i>Pyracantha</i> hybrids varieties	white	(F)	V/VI
<i>Cotinus coggygria 'Royal Purple'</i>	pink		VI	<i>Rhododendron</i> species/varieties all		F (some)	III/VI
<i>Cotoneaster acutifolius</i>	white-pink	(F)	IV/V	<i>Ribes aureum</i>	yellow	F	IV/V
<i>Cotoneaster multiflorus</i>	white	(F)	V	<i>Ribes sanguineum</i> varieties	carmine-red	(F)	IV
<i>Cotoneaster sternianus</i>	white	(F)	V/VI	<i>Rosa</i> species and varieties all		F (some)	V/XI
<i>Cytisus scoparius</i> varieties	yellow	(F)	V/VI	<i>Rubus odoratus</i>	red	f	VI/VIII
<i>Cytisus</i> hybrids varieties	yellow, pink, red	(F)	V/VI	<i>Salix aurita</i>	catkins	f	IV
<i>Deutzia hybrida 'Mont Rose'</i>	pink		V/VI	<i>Sorbaria sorbifolia</i>	white		VI/VII
				<i>Spiraea arguta</i>	white	(F)	IV/V
				<i>Spiraea cinerea 'Grefsheim'</i>	white	(F)	IV/V





12 Conspicuously flowering trees and shrubs

Genus/species/variety	Flower colour	Fragrance	Flowering time
<i>Spiraea nipponica</i> varieties	white		V/VII
<i>Spiraea vanhouttei</i>	white	(F)	V
<i>Tamarix ramosissima</i>	pink		VII/IX
<i>Viburnum bodnantense</i> 'Dawn'	pink	F	IX/IV
<i>Viburnum burkwoodii</i>	pink-white	F	IV/V

5. Normal shrubs

<i>Viburnum carlcephalum</i>	white	F	V
<i>Viburnum farreri</i>	pink-white	F	(XI)III/IV
<i>Viburnum plicatum</i> varieties	white		V/VI
<i>Viburnum</i> 'Pragense'	white	f	V
<i>Weigela</i> hybrids varieties	pink, red		V/VIII
<i>Weigela florida</i> varieties	pink, red		V/VI

6. Small shrubs

<i>Acanthopanax sieboldianus</i>	greenish white		VI/VII
<i>Aronia melanocarpa</i>	white	(F)	V
<i>Berberis</i> - evergreen species	yellow	(F)	V/VI
<i>Caryopteris</i> species and varieties	blue	f	VIII/IX
<i>Ceanothus delilianus</i>			
'Gloire de Versailles'	blue		VII/XI
<i>Ceanothus pallidus</i> 'Marie Simon'	pink		VII/X
<i>Chaenomeles japonica</i>	orange-red		III/IV
<i>Chaenomeles</i> hybrids varieties	white, red		(III)IV/V
<i>Corylopsis pauciflora</i>	yellow	F	(II)III/IV
<i>Cotoneaster sternianus</i>	white	(F)	V
<i>Cytisus nigricans</i> varieties	yellow	f	VII/VIII
<i>Cytisus scoparius</i> varieties	yellow, red, brown		V/VI
<i>Daphne burkwoodii</i> 'Somerset'	pink-white	F	V
<i>Daphne mezereum</i> varieties	carmine, white	F	(II)III/IV
<i>Deutzia gracilis</i>	white		V/VI
<i>Deutzia rosea</i>	pink-white		V
<i>Elaeagnus ebbingei</i>	white	F	IX/XI
<i>Exocorda macrantha</i> 'The Bride'	white	f	V/VI
<i>Forsythia ovata</i> 'Tetragold'	light-yellow		III
<i>Fothergilla gardenii</i>	white	F	IV/V
<i>Fothergilla major</i>	white	F	IV/V
<i>Genista tinctoria</i>	yellow		VII/VIII
<i>Hydrangea arborescens</i> varieties	greenish white, white		VI/VIII
<i>Hydrangea macrophylla</i>	blue, red, white		VII/VIII
<i>Hydrangea quercifolia</i>	white		VI/VIII
<i>Hydrangea serrata</i>	crimson, purple, blue, pink		VII/VIII
<i>Hypericum</i> 'Hidcote'	yellow		VI/IX
<i>Hypericum kalmianum</i> varieties	yellow		VII/VIII
<i>Hypericum patulum</i> henryi	yellow		VII/IX
<i>Kalmia angustifolia</i> 'Rubra'	purple-pink		VI(VII)
<i>Kalmia latifolia</i> varieties	pink, red		V/VI
<i>Kerria japonica</i>	yellow		IV/V
<i>Ledum palustre</i>	white	F	V/VI
<i>Lespedeza thunbergii</i>	crimson-pink		IX/X

Genus/species/variety	Flower colour	Fragrance	Flowering time
<i>Leucothoë walteri</i>	white	f	V/VI
<i>Lonicera japonica repens</i>	white-yellow	F	VI/VII
<i>Lonicera caerulea</i>	white	f	IV/V
<i>Lonicera</i> 'Winter Beauty'	white	f	I-III
<i>Mahonia aquifolium</i> varieties	yellow		IV(V)
<i>Paeonia suffruticosa</i> varieties	white, pink	f	V/VI
<i>Perovskia abrotanoides</i>	purple-blue	F	VIII/IX
<i>Philadelphus</i> hybrids varieties	white	F	VI/VII
<i>Pieris floribunda</i>	white	f	IV/V
<i>Pieris japonica</i> varieties	white, pink		(III)IV/V
<i>Potentilla fruticosa</i> varieties	yellow, white, pink, red		(V)VI/X
<i>Prunus cistena</i>	pink		IV/V
<i>Prunus laurocerasus</i> varieties	white		V/VI(IX)
<i>Prunus tenella</i> varieties	pink	f	IV/V
<i>Rhododendron</i> species/varieties all		F (some)	III/VI
<i>Rhodotypos scandens</i>	white		V/VI
<i>Ribes sanguineum</i>	carmine, red	(F)	IV/V
<i>Rosa</i> species and varieties all		F (some)	V/XI
<i>Salix caprea</i> 'Pendula'	catkins	f	III/IV
<i>Salix hastata</i> 'Wehrhahnii'	catkins	f	III/IV
<i>Salix helvetica</i>	catkins	f	IV/V
<i>Salix lanata</i>	catkins	f	III/IV
<i>Skimmia japonica</i> varieties	white	F	V
<i>Spiraea betulifolia</i> varieties	white		VI
<i>Spiraea bumalda</i> varieties	carmine		VI/IX
<i>Spiraea japonica</i> varieties	pink, carmine		VI/VII
<i>Spiraea nipponica</i> varieties	white		V/VI
<i>Spiraea prunifolia</i>	white		V
<i>Spiraea thunbergii</i>	white	f	(III)IV
<i>Spiraea trilobata</i>	white		V/VI
<i>Stephanandra tanakae</i>	white		VI/VII
<i>Syringa meyeri</i> 'Palibin'	crimson	f	V/VI
<i>Syringa microphylla</i> 'Superba'	pink	(F)	V/VI(IX)
<i>Syringa patula</i> 'Miss Kim'	pink	F	V/VI
<i>Ulex europaeus</i>	yellow	f	IV/V
<i>Viburnum carlesii</i> varieties	pink-white	F	(IV)V
<i>Viburnum plicatum</i> varieties	white		VI/VII, X
<i>Viburnum tinus</i>	white, pink	f	IX/IV
<i>Vinca major</i>	blue		IV

7. Dwarf shrubs

<i>Berberis thunbergii</i> varieties	yellow	(F)	V
<i>Calluna vulgaris</i> varieties	red, pink, white	f	VIII/IX
<i>Cornus canadensis</i>	white		V/VII
<i>Cytisus beanii</i>	yellow		V
<i>Cytisus decumbens</i>	yellow		V
<i>Cytisus kewensis</i>	creamwhite		V
<i>Cytisus purpureus</i>	pink, white		V/VI
<i>Daboecia</i> species and varieties	white, pink		VI/X
<i>Daphne cneorum</i>	carmine-pink	F	V/VI





Genus/species/variety	Flower colour	Fragrance	Flowering time
Deutzia gracilis	white		V
Erica carnea varieties	pink, red, white	f	XI-III/IV
Erica cinerea varieties	pink, red, carmine		VI/VIII
Erica darleyensis	white, pink, red		XI/IV
Erica tetralix varieties	white, pink, red		VII/IX
Erica vagans varieties	pink, red		VII/IX
Genista lydia	yellow		VI
Genista radiata	yellow		VI
Genista sagittalis	yellow		V/VI
Genista tinctoria 'Plena'	yellow		VI
Hebe ochracea	white		VII/VIII
Hypericum moserianum	yellow		VII/IX
Kalmia latifolia varieties	pink, red		V/VI
Pernettya mucronata	white		V/VI
Potentilla fruticosa varieties	yellow, pink, white, red		V/VI/IX
Rhododendron species/varieties all		F (some)	III/VI
Rosa species and varieties all		F (some)	V/IX
Salix repens argentea	catkins	f	IV
Spiraea betulifolia varieties	white		VI
Spiraea decumbens	white		VI
Spiraea japonica 'Albiflora'	white		VII/IX
Spiraea japonica 'Little Princess'	pink		VI/VII
Viburnum davidii	white	f	VI
Vinca minor varieties	blue, purple, crimson		IV/V/VI

8. Semi Shrubs

Ceanothus delilianus			
'Gloire de Versailles'	blue	(F)	VII/X
Ceanothus pallidus 'Marie Simon'	pink		VII/X
Clematis texensis	pink		VI/X
Cornus canadensis	white		V/VII
Genista sagittalis	yellow		V/II
Hypericum calycinum	yellow		VII/IX
Hypericum moserianum	yellow		VII/X
Lavandula angustifolia varieties	blue, purple	F	VI/VII
Lespedeza thunbergii	crimson-pink		IX/X
Pachysandra terminalis varieties	white		IV/V
Perovskia abrotanoides	purple-blue	F	VIII/X
Vinca minor	blue		IV/V(VII)

9. Climbers

see table no. 10

Explanation of symbols: F = pleasant, somewhat strong fragrance /
 (F) = pungent, somewhat unpleasant scent
 f = slight fragrance / I-XII = Month of flowering (January to December)

13 Flowering period calendar

Flowering times are not constants; they vary according to region and change depending on weather conditions, light, etc. Great delays and early starts can occur in spring and late autumn. Thus, some planned and hoped for colour combinations may not even appear. The flower duration and profusion of the various species also varies greatly and is dependent upon the weather.

Flowering time	Genus/species/variety	Flower colour
1. Large trees		
III/IV	Betula maximowicziana	catkins
IV	Acer platanoides varieties	yellow
IV	Acer saccharum	green
V	Aesculus hippocastanum	white
V/VII	Tilia platyphyllos varieties	yellow
V/VIII	Robinia pseudoacacia varieties	white
VI	Liriodendron tulipifera varieties	yellow
VI	Tilia cordata	yellow
VI	Tilia europaea varieties	yellow
VI/VII	Castanea sativa	white
VII	Tilia tomentosa varieties	yellow
2. Medium sized trees		
II/III	Alnus spaethii	catkins
III/IV	Acer freemanii varieties	red
III/IV	Acer rubrum varieties	red
III/IV	Betula maximowicziana	catkins
III/IV	Corylus colurna	yellow
IV	Acer platanoides varieties	yellow
IV	Betula ermanii	catkins
IV	Betula jaquemontii	catkins
IV	Paulownia tomentosa	blue
IV	Pyrus communis	white
IV/V	Prunus avium	white
IV/V	Pyrus calleryana varieties	white
V	Aesculus hippocastanum varieties	white, double
V/VI	Acer cappadocicum varieties	yellow, green
V/VI	Sorbus aucuparia varieties	white
V/VI	Davidia involucrata vilmoriniana	white
V/VI	Sorbus domestica	white
V/VI	Sorbus intermedia	white
V/VI	Sorbus torminalis	white
V/VIII	Robinia pseudoacacia varieties	white
V/VI	Aesculus flava 'Vestita'	yellow
VI	Gymnocladus dioicus	white
VI	Tilia cordata varieties	yellow
VI	Tilia euchlora	yellow
VI/VII	Gleditsia triacanthos varieties	white
VI/VII	Magnolia grandiflora 'Blanchard'	white
VI/VII	Tilia flavescens 'Glenleven'	yellow
VII	Tilia americana 'Nova'	yellow





13 Flowering period calendar

Flowering time	Genus/species/variety	Flower colour
2. Medium sized trees		
VII/VIII	Euodia hupehensis	white
VII/VIII	Sophora japonica varieties	white
VII-IX	Tilia henryana	yellow

Flowering time	Genus/species/variety	Flower colour
3. Small trees		
II/III	Salix daphnoides varieties	catkins
III/IV	Acer rubrum varieties	red
III/IV	Parrotia persica	orange
III/IV	Salix caprea varieties	catkins
III/IV	Salix smithiana	catkins
IV	Amelanchier laevis	white
IV	Amelanchier lamarckii varieties	white
IV	Betula albosinensis	catkins
IV	Cercis siliquastrum	pink
IV	Magnolia soulangeana	pink
IV	Prunus avium 'Plena'	white, double
IV	Prunus cerasifera varieties	pink
IV	Prunus fruticosa 'Globosa'	white
IV	Prunus hillieri 'Spire'	pink
IV	Prunus sargentii	pink
IV	Prunus serrulata varieties	silvery, pink, double
IV	Prunus subhirtella varieties	pink, double
IV	Prunus yedoensis	white
IV	Pyrus calleryana varieties	white
IV	Pyrus regelii	white
IV(V)	Magnolia loebneri varieties	white, pink
IV/V	Acer monspessulanum	yellow, green
IV/V	Halesia carolina	white
IV/V	Magnolia kobus	white
IV/V	Malus sylvestris	white
IV/V	Prunus gondouinii 'Schnee'	white
IV/V	Prunus padus varieties	pink
IV/V	Prunus schmittii	pink-white
IV/V	Pyrus communis varieties	white
IV/V	Pyrus nivalis	white
IV/V	Pyrus salicifolia 'Pendula'	white
V	Acer buergerianum	yellow
V	Acer tataricum	green
V	Acer ginnala	green-white
V	Aesculus carnea 'Briotii'	red
V	Cornus florida varieties	white
V	Crataegus laevigata	white
V	Crataegus monogyna varieties	pink
V	Crataegus coccinea	white
V	Crataegus crus galli	white
V	Laburnum anagyroides	yellow
V	Laburnum watereri 'Vossii'	yellow
V	Malus floribunda	pink-white

Flowering time	Genus/species/variety	Flower colour
V	Malus varieties	white, pink
V	Malus toringo sargentii - seedling	white
V	Malus tschonoskii	white
V	Prunus maackii varieties	white
V	Sorbus aria varieties	white
V	Sorbus arnoldiana	white
V	Sorbus aucuparia varieties	white
V	Sorbus 'Joseph Rock'	white
V/VI	Crataegus laevigata 'Paul's Scarlet'	pink, double
V/VI	Davidia involucrata vilmoriniana	white
V/VI	Lonicera maackii	white
V/VI	Sorbus americana	white
V/VI	Sorbus decora	white
V/VI	Sorbus torminalis	white
V/VI, VIII	Cornus nuttallii varieties	white
V-VII	Prunus lusitanica varieties	white
VI	Cornus alternifolia	white
VI	Cornus controversa	white
VI	Cornus florida rubra	pink
VI	Cornus kousa varieties	white
VI	Crataegus lavalley 'Carrierei'	white
VI	Elaeagnus angustifolia	silver-yellow
VI	Prunus serotina	white
VI	Robinia 'Casque Rouge'	crimson-red
VI	Robinia pseudoacacia varieties	white
VI/VII	Styrax obassia	white
VI/VII	Tilia mongolica	yellow
VI(VII)	Fraxinus ornus varieties	white
VII	Catalpa bignonioides varieties	white
VII/IX	Clerodendron trichotomum fargesii	white
VII/VIII	Euodia hupehensis	white
VII/VIII	Stewartia pseudocamellia	white
VIII	Koelreuteria paniculata	yellow
VIII/IX	Aralia elata varieties	white

Flowering time	Genus/species/variety	Flower colour
4. Large shrubs		
(I)II/III	Hamamelis japonica	yellow
(I/II)III	Salix acutifolia 'Pendulifolia'	catkins
(II)III	Salix caprea varieties	catkins
(XII)II/III	Salix daphnoides 'Praecox'	catkins
II-III	Cornus officinalis	yellow
III/IV	Cornus mas	yellow
III/IV	Corylus avellana	catkins
III/IV	Corylus avellana 'Rotblättrige Zellernuß'	catkins
(II)III/IV	Corylus maxima 'Purpurea'	catkins
III/IV	Forsythia intermedia varieties	yellow
III/IV	Parrotia persica	orange
III/IV	Prunus subhirtella varieties	pink
III/IV	Salix aurita	catkins
III/IV	Salix cinerea	catkins





Flowering period calendar 13

Flowering time	Genus/species/variety	Flower colour
III/IV	Salix smithiana	catkins
III/IV	Salix viminalis	catkins
III/VI	Rhododendron species and varieties	all
(III)IV	Prunus yedoensis	white
IV	Amelanchier lamarckii	white
IV	Cercis siliquastrum	pink, carmine
IV	Magnolia liliiflora varieties	crimson-pink
IV	Prunus cerasifera varieties	pink
IV	Prunus padus	white
IV	Prunus sargentii	pink
IV	Prunus 'Accolade'	pink
IV	Salix sachalinensis 'Sekka'	catkins
IV/V	Amelanchier laevis	white
IV/V	Amelanchier 'Ballerina'	white
IV/V	Halesia carolina	white
IV/V	Magnolia loebneri varieties	white
IV/V	Magnolia soulangeana	pink-white
IV/V	Magnolia stellata varieties	white, pink
IV/V	Prunus serrulata varieties	pink
IV/V	Syringa chinensis varieties	purple-pink
IV/V	Syringa hyacinthiflora varieties	pink, crimson
IV/V	Prunus padus 'Watereri'	white
V	Acer ginnala	green-white
V	Berberis julianae	yellow
V	Berberis ottawensis varieties	yellow
V	Caragana arborescens	yellow
V	Cornus florida varieties	white
V	Cotoneaster bullatus	white
V	Cotoneaster watereri 'Cornubia'	white
V	Crataegus laevigata	white
V	Crataegus coccinea	white
V	Elaeagnus commutata	silver-yellow
V	Laburnum anagyroides	yellow
V	Laburnum watereri 'Vossii'	yellow
V	Malus varieties	white, pink, red
V	Malus toringo sargentii Sämling	white
V	Prunus serrulata 'Kiku-shidare-zakura'	darkpink
V	Rosa species and varieties	all
V	Staphylea colchica	white
V	Syringa prestoniae	crimson-red
V	Syringa vulgaris	purple
V	Syringa vulgaris hybrids	blue, purple, white, red, pink violett, double
V	Viburnum lantana	white
V	Viburnum rhytidophyllum	white
V/VI	Cornus alternifolia	white
V/VI	Cornus controversa	white
V/VI	Cornus florida rubra	pink
V/VI	Cornus sanguinea	white

Flowering time	Genus/species/variety	Flower colour
V/VI	Crataegus laevigata 'Paul's Scarlet'	pink-red
V/VI	Crataegus monogyna	white
V/VI	Deutzia magnifica	white
V/VI	Deutzia scabra varieties	pink-white
V/VI	Elaeagnus angustifolia	silvery-yellow
V/VI	Lonicera maackii	white-light yellow
V/VI	Mespilus germanica	white
V/VI	Philadelphus varieties	white
V/VI	Philadelphus 'Virginal'	white
V/VI	Pyracantha hybrids	white
V/VI	Sorbus koehneana	white
V/VI	Sorbus vilmorinii	white
V/VI	Syringa josikaea	violett
V/VI	Tamarix parviflora	pink
V/VI	Viburnum opulus	white
V/VI	Viburnum opulus 'Roseum'	white
V/VI, VIII	Cornus nuttallii varieties	white
V/VI/VII	Prunus laurocerasus varieties	white
VI	Chionanthus virginicus	white
VI	Cornus kousa varieties	white, pink
VI	Cotinus coggygria varieties	green-white
VI	Crataegus lavallei 'Carrierei'	white
VI	Photinia villosa	white
VI	Prunus lusitanica	white
VI	Prunus serotina	white
VI	Ptelea trifoliata	yellow-green
VI	Robinia hispida varieties	pink
VI/VII	Magnolia sieboldii	white
VI/VII	Sambucus canadensis varieties	white
VI/VII	Sambucus nigra	white
VI/VII	Styrax japonicus	white
VI/VII	Syringa reflexa	pink
VI/VII	Syringa swegiflexa	carmine-pink
VII/VIII	Aesculus parviflora	white
VII/VIII	Clerodendron trichotomum fargesii	white
VII/VIII	Stewartia pseudocamellia	white
VIII/IX	Aralia elata varieties	white
VIII/IX	Buddleja davidii varieties	white, pink
VIII-X	Heptacodium miconioides	white
X/IV	Prunus subhirtella 'Autumnalis'	white
X/IV	Prunus subhirtella 'Autumnalis Rosea'	carmine-pink
XI/XII	Hamamelis virginiana	yellow
XII/II/III	Hamamelis mollis varieties	yellow, orange
XII/II/III/IV	Hamamelis intermedia varieties	yellow, orange, red

5. Normal shrubs

(XI)III/IV	Viburnum farreri	pink-white
II/III	Mahonia bealei	yellow
III/IV	Chaenomeles speciosa	red-orange
III/IV	Enkianthus campanulatus	red-green





13 Flowering period calendar

Flowering time	Genus/species/variety	Flower colour
5. Normal shrubs		
III/IV	Prunus kurilensis 'Brillant'	white
III/VI	Rhododendron species and varieties	all
(III)IV/V	Pieris japonica varieties	white, pink
IV	Corylopsis spicata	lightyellow
IV	Magnolia stellata varieties	white, pink
IV	Malus toringo sargentii Grafted	white
IV	Prunus spinosa	white
IV	Ribes sanguineum varieties	carmine-red
IV(V)	Salix aurita	catkins
IV/V	Aronia melanocarpa 'Viking'	white
IV/V	Chaenomeles hybrids	white, pink, orange, red
IV/V	Cotoneaster acutifolius	white-pink
IV/V	Forsythia 'Lynwood'	yellow
IV/V	Forsythia suspensa fortunei	yellow
IV/V	Fothergilla major	white
IV/V	Kerria japonica 'Pleniflora'	yellow
IV/V	Ribes aureum	yellow
	Prunus triloba	pink, double
IV/V	Spiraea arguta	white
IV/V	Spiraea cinerea 'Grefsheim'	white
IV/V	Viburnum burkwoodii	pink-white
IV/VI	Magnolia liliiflora varieties	pink, white
V	Amelanchier ovalis	white
V	Berberis julianae	yellow
V	Berberis ottawensis varieties	yellow
V	Berberis stenophylla	yellow
V	Berberis thunbergii varieties	yellow
V	Berberis vulgaris	yellow
V	Cotoneaster multiflorus	white
V	Deutzia lemoinei	white
V	Elaeagnus multiflora	light-yellow
V	Lonicera xylostereum	white, light-yellow
V	Prunus serrulata 'Shimidsu'	pink-white
V	Spiraea vanhouttei	white
V	Viburnum carlcephalum	white
V	Viburnum plicatum varieties	white
V	Viburnum 'Pragense'	white
V/IX	Colutea arborescens	yellow
V/VI	Calycanthus floridus	red-brown
V/VI	Cotoneaster sternianus	white
V/VI	Cytisus scoparius varieties	yellow
V/VI	Cytisus hybrids varieties	yellow, pink, red
V/VI	Deutzia hybrida 'Mont Rose'	pink
V/VI	Deutzia kalmiiiflora	light pink
V/VI	Kalmia latifolia	carmine-pink
V/VI	Lonicera tatarica varieties	pink, white
V/VI	Philadelphus coronarius	white
V/VI	Photinia fraseri 'Red Robin'	white
V/VI	Pyracantha hybrids varieties	white

Flowering time	Genus/species/variety	Flower colour
V/VI	Viburnum plicatum varieties	white
V/VI	Weigela florida varieties	pink, red
V/VI(IX)	Prunus laurocerasus varieties	white
V/VII	Physocarpus opulifolius	pink-white
V/VII	Spiraea nipponica varieties	white
V/VIII	Weigela hybrids varieties	pink, red
V/XI	Rosa species and varieties	all
VI	Buddleja alternifolia	purple
VI	Cotinus coggygia 'Royal Purple'	pink
VI	Holodiscus discolor ariifolius	white
VI	Kolkwitzia amabilis	pink
VI	Lonicera korolkowii zabelii	pink
VI/IX	Hibiscus syriacus varieties	blue, purple, red, white, carmine
VI/VII	Lonicera ledebourii	yellow
VI/VII	Philadelphus hybrids varieties	white
VI/VII	Sorbaria sorbifolia	white
VI/VIII	Rubus odoratus	red
VII/IX	Buddleja davidii varieties	purple-blue, red, violett, white
VII/IX	Clethra alnifolia	white
VII/IX	Hydrangea paniculata varieties	white, pink
VII/IX	Tamarix ramosissima	pink
VII/VIII	Hydrangea hybrids varieties	blue, red, white
VII/VIII	Hydrangea sargentiana	white, light-purple
IX/IV	Viburnum bodnantense 'Dawn'	pink
IX/X	Lespedeza thunbergii	crimson-pink
IX/X	Osmanthus heterophyllus	white
XII/II/III/IV	Hamamelis intermedia varieties	yellow, orange, red
6. Small shrubs		
(II)III/IV	Corylopsis pauciflora	yellow
(II)III/IV	Daphne mezereum varieties	carmine, white
III/IV	Chaenomeles japonica	orangered
(III)IV/V	Chaenomeles hybrids (C. superba) varieties	white, red
III	Forsythia ovata 'Tetragold'	light yellow
(III)IV/V	Pieris japonica varieties	white, pink
III/VI	Rhododendron species and varieties	all
III/IV	Salix caprea 'Pendula'	catkins
III/IV	Salix hastata 'Wehrhahnii'	catkins
III/IV	Salix lanata	catkins
(II)IV	Spiraea thunbergii	white
IV/V	Fothergilla gardenii	white
IV/V	Fothergilla major	white
IV/V	Kerria japonica	yellow
IV/V	Lonicera caerulea	white
IV(V)	Mahonia aquifolium varieties	yellow
IV/V	Pieris floribunda	white
IV/V	Prunus cistena	pink
IV/V	Prunus tenella varieties	pink





Flowering time	Genus/species/variety	Flower colour
IV/V	Ribes sanguineum	carmine, red
IV/V	Salix helvetica	catkins
IV/V	Ulex europaeus	yellow
(IV)V	Viburnum carlesii varieties	pink-white
V	Aronia melanocarpa	white
V/VI	Berberis - evergreen species and varieties	yellow
V	Cotoneaster sternianus	white
V/VI	Cytisus scoparius varieties	yellow, red, brown
V	Daphne burkwoodii 'Somerset'	pink-white
V/VI	Deutzia gracilis	white
V	Deutzia rosea	pink-white
V/VI	Exocorda macrantha 'The Bride'	white
V/VI	Kalmia latifolia varieties	pink, red
V/VI	Ledum palustre	white
V/VI	Leucothoë walteri	white
V/VI	Paeonia suffruticosa varieties	white, pink
(V)VI/X	Potentilla fruticosa varieties	yellow, white, pink, red
V/VI(IX)	Prunus laurocerasus varieties	white
V/VI	Rhodotypos scandens	white
V/XI	Rosa species and varieties	all
V	Skimmia japonica varieties	white
V/VI	Spiraea nipponica varieties	white
V	Spiraea prunifolia	white
V/VI	Spiraea trilobata	white
V/VI	Syringa meyeri 'Palibin'	crimson
V/VI(IX)	Syringa microphylla 'Superba'	pink
V/VI	Syringa patula 'Miss Kim'	pink
VI	Spiraea betulifolia varieties	white
VI/VII	Acanthopanax sieboldianus	green-white
VI/VIII	Hydrangea arborescens varieties	green-white, white
VI/VIII	Hydrangea quercifolia	white
VI/IX	Hypericum 'Hidcote'	yellow
VI(VII)	Kalmia angustifolia 'Rubra'	crimson-pink
VI/VII	Lonicera japonica repens	white-yellow
VI/VII	Philadelphus hybrids varieties	white
VI/IX	Spiraea bumalda varieties	carmine
VI/VII	Spiraea japonica varieties	pink, carmine
VI/VII	Stephanandra tanakae	white
VI/VII, X	Viburnum plicatum varieties	white
IV	Vinca major	blue
VII/XI	Ceanothus delilianus 'Gloire de Versailles'	blue
VII/X	Ceanothus pallidus 'Marie Simon'	pink
VII/VIII	Cytisus nigricans varieties	yellow
VII/VIII	Genista tinctoria	yellow
VII/VIII	Hydrangea hybrids varieties	blue, red, white
VII/VIII	Hydrangea serrata	crimson, purple, blue,
VII/VIII	Hypericum kalmianum varieties	yellow
VII/IX	Hypericum patulum henryi	yellow
VIII/IX	Caryopteris species and varieties	blue
VIII/IX	Perovskia abrotanoides	purple-blue

Flowering time	Genus/species/variety	Flower colour
IX/XI	Elaeagnus ebbingei	white
IX/X	Lespedeza thunbergii	crimson-pink
IX/IV	Viburnum tinus	white, pink

7. Dwarf shrubs

III/VI	Rhododendron species and varieties	all
IV	Salix repens argentea	catkins
IV/V/VI	Vinca minor varieties	blue, purple, crimson
V	Berberis thunbergii varieties	yellow
V/VII	Cornus canadensis	white
V	Cytisus beanii	yellow
V	Cytisus decumbens	yellow
V	Cytisus kewensis	creme white
V/VI	Cytisus crimsoneus	pink, white
VI/X	Daboecia species and varieties	white, pink
V/VI	Daphne cneorum	carmine-pink
V	Deutzia gracilis	white
V/VI	Genista sagittalis	yellow
V/VI	Kalmia latifolia varieties	pink, red
V/VI	Pernettya mucronata	white
V/VI/IX	Potentilla fruticosa varieties	yellow, pink, white, red
V/IX	Rosa species and varieties	all
VI/VIII	Erica cinerea varieties	pink, red, carmine
VI	Genista lydia	yellow
VI	Genista radiata	yellow
VI	Genista tinctoria 'Plena'	yellow
VI	Spiraea betulifolia varieties	white
VI	Spiraea decumbens	white
VI/VII	Spiraea japonica 'Little Princess'	pink
VI	Viburnum davidii	white
VII/IX	Erica tetralix varieties	white, pink, red
VII/IX	Erica vagans varieties	pink, red
VII/VIII	Hebe ochracea	white
VII/IX	Hypericum moserianum	yellow
VII/IX	Spiraea japonica 'Albiflora'	white
VIII/IX	Calluna vulgaris varieties	red, pink, white
XI-III/IV	Erica carnea varieties	pink, red, white
XI/IV	Erica darleyensis	white, pink, red

8. Half Shrubs

IV/V	Pachysandra terminalis varieties	white
IV/V(VII)	Vinca minor	blue
V/VII	Cornus canadensis	white
V/II	Genista sagittalis	yellow
VI/VII	Lavandula angustifolia varieties	blue, purple
VI/X	Clematis texensis	pink
VII/X	Ceanothus delilianus 'Gloire de Versailles'	blue
VII/X	Ceanothus pallidus 'Marie Simon'	pink
VII/IX	Hypericum calycinum	yellow
VII/X	Hypericum moserianum	yellow
VIII/X	Perovskia abrotanoides	purple-blue





14 Fragrant and aromatic plants

A distinction is made between fragrant and aromatic plants. Put simply, a fragrance is a scent that spreads by itself and is perceived as pleasant. For strong or repugnant fragrances, one usually speaks neutrally of smells or derogatorily of stench. Aromas occur when the proper plant part is rubbed, crushed, broken or roasted (in the sun) to release its ether oils or fruits or flowers bouquets.

Fragrances or aromas are not always perceived the same; the opinions vary greatly, as the example of *Buxus sempervirens* shows: for some it is pungent-aromatic, for others simply repugnant. In addition, men and woman very considerably in their perceptions of scents. The weather and time of day also play an important role. Some plants are strongly fragrant in the evening, while they almost go unnoticed at noon-and vice versa. For more on this, see the individual descriptions.

Genus/species/variety	Fragrant	Aroma
1. Deciduous tree		
<i>Acer platanoides</i>	F	
<i>Acer rubrum</i>	F	
<i>Ailanthus altissima</i>	(F)	(AF)
<i>Amelanchier</i> species	(F)	
<i>Betula pendula</i>		a
<i>Castanea sativa</i>	(F)	
<i>Cercidiphyllum japonicum</i>		AF
<i>Cornus alternifolia</i>	(F)	
<i>Crataegus</i> species and varieties	(F)	
<i>Elaeagnus angustifolia</i>	F	
<i>Fraxinus ornus</i>	F	
<i>Heptacodium miconioides</i>	F	
<i>Juglans regia</i>	F	(AF)
<i>Laburnum</i> species and varieties	F	
<i>Lonicera maackii</i>	F	
<i>Magnolia</i> species and varieties	F	
<i>Malus</i> species and varieties	F	
<i>Populus balsamifera</i>		AF
<i>Populus simonii</i>		a
<i>Prunus avium</i>	F	
<i>Prunus lusitanica</i> 'Angustifolia'	f	
<i>Prunus padus</i>	(F)	a
<i>Pyrus</i> species and varieties	(F)	
<i>Robinia</i> species and varieties	F	
<i>Salix</i> species and varieties	F	a
<i>Sorbus</i> species and varieties	(F)	
<i>Styrax japonicus</i>	F	
<i>Styrax obassia</i>	F	
<i>Tilia henryana</i>	F	
<i>Tilia</i> species and varieties	F	

Genus/species/variety	Fragrant	Aroma
2. Shrubs		
<i>Amelanchier</i> species	(F)	
<i>Berberis</i> species and varieties	(F)	
<i>Buddleja</i> species and varieties	(F)	
<i>Buxus sempervirens</i> varieties	(F)	(AF)
<i>Calluna vulgaris</i> species	f	
<i>Calycanthus floridus</i>	F	a
<i>Ceanothus delilianus</i> 'Gloire de Versailles'	(F)	
<i>Cercis siliquastrum</i>	f	
<i>Chaenomeles</i> species and varieties	F	
<i>Chionanthus virginicus</i>	f	
<i>Clethra alnifolia</i>	F	
<i>Cornus alternifolia</i>	(F)	
<i>Cornus mas</i>	f	
<i>Cornus sanguinea</i>	(F)	
<i>Corylopsis</i> species	F	
<i>Cotoneaster</i> species and varieties	(F)	
<i>Crataegus</i> species and varieties	(F)	
<i>Cytisus praecox</i>	(F)	
<i>Cytisus scoparius</i> varieties	(F)	
<i>Daphne</i> species and varieties	F	
<i>Elaeagnus</i> species and varieties	F	
<i>Erica</i> species and varieties	f	
<i>Fothergilla major</i>	F	
<i>Gaultheria procumbens</i>	T	AF
<i>Hamamelis</i> species and varieties	F	
<i>Hedera</i> species and varieties	(F)	
<i>Laburnum</i> species and varieties	f	
<i>Leucothoë walteri</i>	f	
<i>Ligustrum</i> species and varieties	(F)	
<i>Lonicera japonica repens</i>	F	
<i>Lonicera maackii</i>	F	
<i>Lonicera xylosteum</i>	F	
<i>Magnolia</i> species and varieties	F	
<i>Mahonia aquifolium</i>	(F)	
<i>Mahonia bealei</i>	F	
<i>Malus</i> species and varieties	F	
<i>Perovskia abrotanoides</i>	(F)	(AF)
<i>Philadelphus</i> species and varieties	F	
<i>Pieris</i> species and varieties	f	
<i>Prunus laurocerasus</i> varieties	(F)	a
<i>Prunus spinosa</i>	f	
<i>Prunus tenella</i>	f	
<i>Pyracantha</i> hybrids varieties	(F)	
<i>Rhododendron</i> species and varieties	F	AF
<i>Rhododendron Azalea</i> varieties	F	
<i>Ribes alpinum</i>	f	a
<i>Ribes aureum</i>	F	
<i>Ribes sanguineum</i>	(F)	(AF)
<i>Rosa</i> species and varieties	F	





Genus/species/variety	Fragrant	Aroma
<i>Rosa rubiginosa</i>	f	AF
<i>Rubus odoratus</i>	f	
<i>Salix</i> species and varieties	f	a
<i>Sambucus nigra</i>	F	(AF)
<i>Skimmia japonica</i>	F	
<i>Spiraea</i> species and varieties	(F)	
<i>Stranvaesia davidiana</i>	(F)	
<i>Syringa chinensis</i>	F	
<i>Syringa josikaea</i>	(F)	
<i>Syringa microphylla</i>	(F)	
<i>Syringa reflexa</i>	(F)	
<i>Syringa swegiflexa</i>	(F)	
<i>Syringa vulgaris</i> varieties	F	
<i>Viburnum burkwoodii</i>	F	
<i>Viburnum carlcephalum</i>	F	
<i>Viburnum carlesii</i>	F	
<i>Viburnum davidii</i>	(F)	
<i>Viburnum farreri</i>	F	
<i>Viburnum lantana</i>	(F)	
<i>Viburnum rhytidophyllum</i>	(F)	
3. Climbers		
<i>Akebia quinata</i>	f	
<i>Actinidia arguta</i>	f	
<i>Clematis maximowicziana</i>	(F)	
<i>Clematis montana</i> varieties	F	
<i>Clematis vitalba</i>	(F)	
<i>Hedera</i> species and varieties	(F)	
<i>Hydrangea petiolaris</i>	f	
<i>Lonicera japonica repens</i>	F	
<i>Lonicera caprifolium</i>	F	
<i>Lonicera heckrottii</i>	F	
Rosa - Climbing Roses	F	
<i>Wisteria sinensis</i>	F	
4. Conifers		
<i>Abies</i> species and varieties		AF
<i>Cedrus</i> species and varieties		a
<i>Chamaecyparis</i> species and varieties		(AF)
<i>Ginkgo biloba</i>	T	
<i>Juniperus</i> species and varieties	T	(AF)
<i>Larix</i> species and varieties		a
<i>Picea</i> species and varieties		a
<i>Pinus</i> species and varieties		AF
<i>Pseudotsuga menziesii caesia</i>		a
<i>Thuja</i> species and varieties		(AF)
<i>Tsuga</i> species and varieties		a

Explanation of symbols: F = fragrance / (F) = pungent, somewhat unpleasant fragrance / f = slight fragrance / AF = aromatic foliage (AF) = strong smelling foliage / a = slightly fragrant to aromatic foliage / T = fragrant or aromatic fruit





15 Four-season plants

This category includes plants that have splendid effects in more than one season. This does not mean that these are “ever-flowering” plants, which do not actually exist. Rather, these are plants with several climactic colours or shapes, for spectacular or sensational flowers, fruits or fragrances cannot be expected in all seasons.

The divisions into the four seasons should not be viewed too strictly as some colourful events may run parallel, i.e. flowers and colourful shoots, autumn colours and fruits, etc. Plants with exceptional flowers—such as Forsythia—that are of little interest after seasonal flowering are not listed. In addition, not all evergreen deciduous trees are listed as their long-lasting effects are taken. For granted - see table 23; “Evergreen plants”.

Genus/species/variety	Prespring	Spring	Summer	Autumn	Winter
<i>Acer ginnala</i>	---	white flowers	red fruit wings	bright red autumn colours	persistent fruit wings, brown
<i>Acer griseum</i>	cinnamon-red bark	shoots reddish, flowers yellowish	---	orange-red in autumn	cinnamon-red bark
<i>Acer japonicum</i> 'Aconitifolium'	red flowers	filigree leaf shape	leaf shape	orange-red in autumn	---
<i>Acer palmatum</i> varieties	---	shoots colourful	ornamental leaf shapes	bright orange to red autumn colours	---
<i>Acer pensylvanicum</i>	white-striped bark, red buds	reddish shoots	---	yellow autumn colours	bark
<i>Acer rubrum</i>	red flowers, slight fragrance of honey	reddish shoots	red fruit wings	orange-red in autumn	bark
<i>Acer rufrinerve</i>	white-striped bark, red buds	bronze-green shoots	white-striped bark	orange autumn colours, bark	bark
<i>Aesculus parviflora</i>	---	reddish shoots	white flowers	yellow autumn colours	---
<i>Alnus incana</i> 'Aurea'	orange red catkins	yellow shoots	greenish-yellow leaves	yellow autumn colours	---
<i>Alnus spaethii</i>	reddish-yellow catkins	violet-red shoots	---	violet-red autumn colours	---
<i>Amelanchier laevis</i>	white flowers	reddish shoots	fruits blue-black	orange-red in autumn	---
<i>Amelanchier lamarckii</i>	white flowers	shoots grey	fruits blue-black	orange autumn colours	---
<i>Aronia</i> species and varieties	---	shoots red, flowers white	---	fruits reddish to black, red autumn colours	some with autumn colours
<i>Berberis ottawensis</i> varieties	---	shoots red, flowers yellow	leaves black-red	red autumn colours	fruits light red
<i>Berberis thunbergii</i> 'Atropurpurea' - species	---	shoots red	leaves red-brown	red autumn colours	fruits light red colours
<i>Betula</i> in species and varieties	bark white, catkins yellow	shoots light green, fragrant	---	yellow autumn colours	white bark
<i>Cercidiphyllum japonicum</i>	reddish flowers	brown-red shoots	leaf shape	yellow-orange autumn colours	fragrant falling leaves
<i>Chaenomeles</i> hybrids	partially flowers appear	shoots reddish, flowers white, pink and red	---	fruits bright yellow	persistent fruit





Four-season plants 15

Genus/species/variety	Prespring	Spring	Summer	Autumn	Winter
Clematis wild fruits varieties	silvery white	partially flowers appear	flowers	---	silvery syncarpy
Cornus alba varieties	red bark	reddish shoots	variegated leaves	reddish autumn colours	coloured bark
Cornus kousa varieties	---	flowers white to pink	fruits red	red autumn colours	---
Cornus mas	flowers yellow, slightly fragrant	---	fruits red	yellow-orange autumn colours	---
Cornus nuttallii	---	shoots light green, flowers white	some still flowering	yellow to orange autumn colours, fruits red	some still have fruit
Cotinus coggygria 'Royal Purple'	---	shoots black-red	cottony inflorescences, pink	bright red autumn colours	---
Cotoneaster horizontalis	shoots early, fresh green	flowers white with pink	---	scarlet autumn colours	red fruits, filigree branching
Cotoneaster multiflorus	---	white flowers	fruits red	yellow autumn colours	---
Cotoneaster praecox	shoots early, fresh green	pink-white flowers	fruits red	bright red autumn colours	---
Crataegus lavallei 'Carrierei'	---	white flowers	shiny green leaves	orange autumn colours	persistent fruit, orange-red
Crataegus coccinea	shoots early	white flowers	fruits redden early	orange autumn colours	---
Crataegus prunifolia	---	white flowers	shiny green leaves	orange autumn colours	spectacular thorns
Elaeagnus pungens 'Maculata'	evergreen	shoots grey	leaves with yellow spots	flowers white, strong vanille fragrance	occasional fruits, reddish
Euonymus phellomanus	bark with corky strips	white flowers	---	plentiful fruit, red, orange autumn colours	bark with corky strips
Fothergilla species	---	white flowers strong honey fragrance	two-colour leaves, grey underneath	red autumn colours	---
Halesia carolina	picturesque habit	white bells	four-winged stone fruit	yellow autumn colour	---
Hamamelis species and varieties	flowers yellow or red, pleasant fragrance	some still flowering	---	yellow or red autumn colours	flowering begins, yellow or red
Koelreuteria paniculata	---	reddish shoots	flowers yellow	orange-yellow autumn colours	fruits swollen like blisters
Magnolia species and varieties	flowers pink or white, strong fragrance	shoots reddish, some still flowering	---	yellowish-brown autumn colours	silvery buds
Malus hybrids	---	flowers white, pink or carmine, fragrance; reddish shoots	some have bronze leaves	fruits red or yellow	some still have fruit
Parrotia persica	reddish flowers	reddish shoots	---	orange-red autumn colours	multi coloured bark
Photinia villosa	---	white flowers	---	red autumn colours, red fruits	some still have fruit





15 Four-season plants

Genus/species/variety	Prespring	Spring	Summer	Autumn	Winter
Photinia fraseri 'Red Robin'	evergreen	shoots bright red, flowers white	some still flowering, evergreen	evergreen	evergreen
Pieris japonica 'Forest Flame' u. 'Red Mill'	evergreen	shoots bright red to red-brown, flowers white	evergreen	evergreen	evergreen
Prunus avium	flowers white, slightly fragrant	shoots green- golden to bronze	fruits red or black	orange-yellow autumn colours	shiny red-brown bark
Prunus kurilensis 'Brillant'	white flowers	reddish green shoots	fruits shiny black	bright red autumn colours	---
Prunus hillieri 'Spire'	pink-white flowers	bronze-red shoots	---	orange-red in autumn	---
Prunus maackii varieties	shiny orange bark	white flowers	early fruits, black	reddish yellow autumn colours	bright bark
Prunus sargentii	flowers pink, bark shiny brown	brown-red shoots	---	red autumn colours	shiny brown bark
Prunus schmittii	shiny red-brown bark	flowers light pink	---	yellowish autumn colours	shiny red-brown bark
Prunus serrula	shiny mahogany- red bark	white flowers	---	yellow autumn colours	red bark
Prunus serrulata varieties	flowers white or pink, bark shiny brown	shoots reddish or green-golden	---	orange-yellow autumn colours	bark
Rhododendron Azalea	flowers brightly co- loured, sweet fragrance	reddish shoots	---	orange autumn colours	---
Rosa species and varieties	---	flowers white, pink, red	some still flowering	yellow to orange autumn colours	persistent rose hips, red or orange
Salix acutifolia 'Pendulifolia'	yellow catkins, fragrant glaucous blue dark	bark	two-tone leaves, elegant leaf positions	yellow autumn colours	blue glaucous bark
Salix daphnoides varieties	yellow catkins, fragrant glaucous blue-white bark	bark	two-tone leaves	yellow autumn colours	bark, some catkins
Salix sachalinensis 'Sekka'	catkins silvery to yellow, twigs like strips	fresh green shoots	---	yellow to green autumn colours	twigs like strips flattened
Sorbus vilmorinii	---	white flowers	filigree foliage	red-brown, autumn colours, pink fruits	---
Spiraea betulifolia varieties	---	early shoots, reddish, white flowers	flowers	some orange autumn colours	---
Stephanandra tanakae	orange-brown twigs	shoots early	white flowers	orange-yellow autumn colours	orange-brown twigs
Viburnum bodnantense 'Dawn'	pink flowers, strong vanille fragrance	shoots early, reddish	---	brick-red in autumn	flowering begins, flowers pink to white, fragrant
Viburnum farreri	flowers pink-white	green-golden shoots strong fragrance	---	crimson-red autumn colours	flowering begins, flowers pink-white
Viburnum opulus	fruits from previous year still persisting	white flowers	---	orange autumn colours, red fruits	fruits still persisting





16 Plants with decorative fruit

Conspicuously coloured fruits generally appear at the end of July/August. The degree of ripeness depends on the weather conditions, which means the colours are not the same at the same time every year. Theoretically, berries, capsules, and pods may last for weeks, but in some years birds may bring a swift end to the decorative fruit.

Note: For the poisonous of these plants, see special 18 - Poisonous plants.

Genus/species/variety	Fruit colour / Fruit shape	Edibility
1. Deciduous plants		
Acer ginnala	red	
Acer palmatum	red	
Acer rubrum	red	
Aesculus hippocastanum	brown	inedible, pungent
Alnus cordata	green, brown	
Amelanchier species	blue-black	edible, sweet
Aralia elata	black	poisonous, bitter
Castanea sativa	brown	edible
Catalpa bignonioides	brown	
Clerodendron trichotomum	black/blue with red	inedible
Cornus controversa	black	inedible
Cornus florida	red	inedible
Cornus kousa varieties	red	tasteless
Cornus nuttallii	pink to crimson	tasteless
Corylus columna	brown clusters of fruit	tasteless
Crataegus lavalleyi 'Carrierei'	orange-red	mealy, sour
Elaeagnus angustifolia	yellow	sweet
Euodia hupehensis	red to black	inedible
Gleditsia triacanthos	brown husks	
Ilex aquifolium varieties	red	very poisonous
Juglans cinerea	brown	edible
Juglans regia	green	edible
Koeleruteria paniculata	brown	
Liquidambar styraciflua	green hedgehog	inedible
Lonicera maackii	red	inedible
Magnolia species and varieties	red	inedible
Malus hybrids varieties	red, orange, yellow	edible, sour
Mespilus germanica	brown	edible, doughy
Morus species	red till black	edible, sweet
Ostrya carpinifolia	brown	inedible
Paulownia tomentosa	brown	inedible
Phellodendron amurense	black	inedible
Prunus avium	red, black	edible, sweet
Prunus cerasifera varieties	red	edible, sweet
Prunus mahaleb	black	bitter-sweet
Prunus serotina	black	bitter-sweet
Pterocarya fraxinifolia	green panicles	inedible
Rhus species and varieties	reddish spadix panicles	inedible
Sorbus species and varieties	many colours	bitter, tangy, sour

Genus/species/variety	Fruit colour / Fruit shape	Edibility
2. Shrubs		
Acanthopanax sieboldianus	black	poisonous
Acer palmatum	red	
Acer tataricum	red	
Amelanchier species/varieties	blue-black	edible, sweet
Arctostaphylos uva-ursi	red	mealy-tasteless
Aronia species and varieties	red und black	edible, sweet
Aucuba japonica	red	poisonous
Berberis – summergreen	red	sour, juicy
Berberis – evergreen	blue-black	inedible
Callicarpa species and varieties	violet	inedible
Ceanothus species/varieties	brown	inedible
Celtis australis	violet-brown	edible, sweet
Chaenomeles species/var.	yellow	edible, aromatic
Chionanthus virginicus	black	inedible
Heptacodium miconioides	crimson-red	
Colutea arborescens	red-brown	poisonous
Cornus alba varieties	white	inedible
Cornus canadensis	red	tasteless
Cornus mas	red	edible, sour
Cornus sanguinea	black	inedible
Corylus species	brown	edible
Cotinus coggygria varieties	like hairs	inedible
Cotoneaster species/varieties	red, black	mealy-tasteless
Crataegus species/varieties	red	mealy
Decaisnea fargesii	blue	sticky-sweet
Elaeagnus species and varieties	silvery brown-red	edible, sweet
Empetrum nigrum	black	edible, bitter
Euonymus species/varieties	orange, red	very poisonous
Gaultheria procumbens	red	edible, aromatic
Gaultheria shallon	black	mealy
Hedera species and varieties	black	very poisonous
Hippophae rhamnoides	orange	edible, sweet-sour
Hydrangea arborescens var.	brown with red umbels	
Ilex species and varieties	red	very poisonous
Ligustrum species and varieties	black	very poisonous
Lonicera species and varieties	red, black	inedible, poisonous
Lycium barbarum	orange-red	very poisonous
Mahonia aquifolium	blue-black	sour
Malus hybrids	red, orange, yellow	edible, sour
Pernettya mucronata varieties	white, pink, red	poisonous
Photinia villosa	red	mealy
Physocarpus opulifolius	brown capsules	
Prunus species and varieties	dark red, black	bitter-sweet
Prunus spinosa	blue-black	bitter-sweet
Ptelea trifoliata	yellow-green	extremely bitter
Pyracantha hybrids	red, orange, yellow	mealy
Rhamnus species and varieties	black	poisonous
Rhodotypos scandens	black	inedible
Rosa species and varieties	red, orange, black	edible, sweet





16 Plants with decorative fruit

Genus/species/variety	Fruit colour / Fruit shape	Edibility
2. Shrubs		
Rubus species	black	edible, sweet
Sambucus nigra	black	edible, tangy
Sambucus racemosa	red	raw inedible
Skimmia japonica varieties	red	inedible
Stranvaesia davidiana	red	mealy
Symphoricarpos a. laevigatus	white	inedible
Symphoricarpos chenaultii	pink	inedible
Symphoricarpos doorenbosii	carmine, red	inedible
Symphoricarpos orbiculatus	rosared	inedible
Vaccinium corymbosum	blue-black	edible, sweet
Vaccinium macrocarpon	red	edible, tangy
Vaccinium vitis-idaea varieties	red	edible, tangy
Viburnum davidii	blue	inedible
Viburnum lantana	red und black	poisonous
Viburnum opulus	red	inedible
Viburnum rhytidophyllum	red und black	inedible
Viburnum tinus	steel blue	inedible
3. Climbers		
Celastrus orbiculatus	yellow or orange	very poisonous
Clematis species and varieties	silvery	poisonous
Hedera species and varieties	black	poisonous
Lonicera species and varieties		orange, red
		poisonous
Lonicera henryi	black	poisonous
Parthenocissus species	blue-black	scratchy, inedible
Rosa - Climbing Roses	red	sour-sweet
4. Conifers		
Abies koreana	cones violet	
Abies procera 'Glauca'	large cones	
Cedrus atlantica 'Glauca'	cones	
Ginkgo biloba	yellow	strong smell
Juniperus species and varieties	blue-black	poisonous
Juniperus communis varieties	blue	tangy-aromatic
Picea abies 'Acrocona'	mounstrous cones	
Picea omorika	cones	
Picea orientalis	decorative cones	
Picea pungens varieties	brown cones	
Pinus densiflora 'Pumila'	numerous cones	
Pinus parviflora varieties	numerous cones	
Pinus peuce	numerous cones	
Pinus strobus varieties	numerous cones	
Pinus wallichiana	numerous cones	
Taxus baccata	like berries, red	only husk, poisonous
Tsuga canadensis	decorative cones	
Tsuga mertensiana	violet-brown cones	

17 Plants with edible fruit - wild fruit

This summary is intended for sites where the planting is selected so that the fruits are either useable raw or cooked. This does not mean that the berries, nuts, or capsules necessarily taste good.

Fruits that taste repulsive or neutral but are theoretically edible were left out. The fruit-bearing plants are important as educational tools in schoolyards, as food for the self-sufficient and connoisseurs of wild fruit or simply to lure wild animals for observation.

Genus/species/variety	Edibility / characteristics
1. Deciduous plants	
Amelanchier species and varieties	raw, processed
Aronia species and varieties	raw, processed
Berberis vulgaris	processed, rich in vitamins
Castanea sativa	processed
Celtis australis	processed
Chaenomeles species and varieties	processed
Cornus mas	raw, processed, rich in vitamins
Corylus species and varieties	raw, processed
Crataegus lavallei 'Carrierei'	raw, processed
Crataegus coccinea	processed
Cydonia oblonga	processed, aroma-, rich in vitamins
Elaeagnus species and varieties	raw, processed
Empetrum nigrum	processed
Gaultheria procumbens	processed, strange-aromatic
Hippophae rhamnoides	raw, processed
Juglans cinerea	raw, processed
Juglans regia	raw, processed
Lonicera caerulea	processed
Mahonia aquifolium	processed
Malus hybrids	raw, processed, somewhat tangy
Mespilus germanica	processed
Morus species and varieties	raw, processed, rich in vitamins
Prunus avium	raw, processed
Prunus cerasifera varieties	raw, processed
Prunus spinosa	processed, sehr herb
Quercus alba	roasted/ ground, like chestnuts
Ribes aureum	processed, very tangy
Rosa species and varieties	raw, processed, rich in vitamins
Rubus calycinoides	raw, processed
Rubus fruticosus	raw, processed
Rubus idaeus	raw, processed
Sambucus nigra	processed, only fully ripe, rich in vitamins
Sambucus racemosa	processed, very tangy
Sorbus aucuparia varieties	processed, very tangy, rich in vitamins
Sorbus arnoldiana varieties	processed, very tangy
Sorbus decora	processed, rich in vitamins
Sorbus domestica	processed





Genus/species/variety	Edibility / characteristics
Sorbus torminalis	processed
Vaccinium corymbosum	raw, processed, rich in vitamins
Vaccinium macrocarpon	processed, rich in vitamins
Vaccinium vitis-idaea varieties	processed, rich in vitamins

2. Climbers

Actinidia species and varieties	raw, processed, rich in vitamins
Akebia quinata	raw
Rosa - Climbing Roes	raw, processed

3. Conifers

Ginkgo biloba	processed, kernels roasted
Juniperus communis	processed/fermented
Pinus cembra	raw, processed, pine nuts
Taxus baccata	raw, only seed case, kernels poisonous

18 Poisonous plants

This "list of poisonous plants" is only meant to provide orientation. It is not and cannot be exhaustive as our knowledge of chemical composition is quite insufficient. Many plants considered poisonous probably are not. Often, conspicuous berries and a foul smell lead to unjustified suspicion. The plants listed as slightly poisonous are only mentioned so that their poisonousness is not overestimated. Plant parts of many of these species would have to be eaten in large amounts to lead to strong symptoms. Many of them have such a repulsive taste—based on the samples tried by the author—that it is hardly imaginable that children would voluntarily eat more than a few berries. The plants marked with +++ are extremely poisonous, and their inclusion in any landscape scheme should be carefully considered. The others will lead to diarrhoea, vomiting, dizziness or headaches if their plant parts are eaten. You should see a doctor in any case.

In critical cases, the following reference works are recommended:

- ROTH/ DAUNDERER/KORKMANN: Giftpflanzen - Pflanzengifte. Ecomed-Verlag, Landsberg - München, 1988
- FROHNE/PFÄNDER: Giftpflanzen. Wissensch. Verlagsgesellschaft Stuttgart, 1987
- Information centres for cases of poisoning are found in all major cities in the university and city clinics

Explanation of symbols:

- +++ = extremely poisonous
- ++ = very poisonous
- + = poisonous
- (+) = slightly poisonous

Genus/species/variety	Poisonous plant part	Degree of poison	Taste
1. Deciduous plants			
Acanthopanax sieboldianus	whole plant	+	bitter
Aesculus species and varieties	unripe fruit, green fruit husks	(+)-+	tart, tangy
Ailanthus altissima	bark, seeds	+	bitter
Aralia elata and varieties	bark, seeds	+	repugnantly bitter-sweet
Aristolochia macrophylla	whole plant	+	unpleasant
Aucuba japonica	whole plant	+	bitter fruits
Berberis - species with blue fruits	roots, bark, berries	+	red fruits harmless
Buddleja davidii	leaves, seeds	(+)	empty
Buxus sempervirens varieties	whole plant	++	bitter
Calycanthus floridus	whole plant	(+)	aromatic
Caragana arborescens	whole plant	(+)	
Catalpa bignonioides	whole plant	(+)	unpleasant
Celastrus orbiculatus	whole plant	+	berries bittersweet
Clematis species and varieties	whole plant	+	
Colutea arborescens	leaves, seeds	+	bitter
Cornus sanguinea	leaves, fruits	(+)	berries repugnantly bittersweet
Cotinus coggygria	whole plant	(+)	
Cytisus species and varieties	whole plant	+	Pods like beans
Daphne species and varieties	whole plant	+++ !	peppery hot
Euonymus species and varieties	whole plant	++	bitter
Fagus sylvatica	beechnuts	(+)	like nuts
Genista species and varieties	whole plant	+	bitter
Gleditsia triacanthos and varieties	only leaves	+	fruits edible
Gymnocladus dioica	leaves, seeds	+	
Hedera species and varieties	whole plant	+	berries like paper, burningly bitter
Ilex species and varieties	whole plant	++	berries repugnantly tangy
Kalmia species and varieties	whole plant	+	unpleasant
Laburnum species and varieties	whole plant	+++	fruits like beans, sweet roots
Ledum palustre	whole plant	+	aromatic-bitter
Ligustrum species and varieties	whole plant	+	fruits repugnantly sweet





18 Poisonous plants

Genus/species/variety plant part	Poisonous	Degree of poison	Taste
1. Deciduous plants			
Liriodendron tulipifera whole plant		+	fruits aromatic-bitter
Lonicera species and varieties berries		(+)	fruits repugnantly sweetish-bitter
Lycium barbarum whole plant		++	
Mahonia aquifolium whole plant except berries!		+	berries are processed into jelly in the USA
Myrica gale whole plant		+	intensely aromatic bitter
Pachysandra terminalis whole plant		+	
Paeonia suffruticosa varieties whole plant		+	
Pernettya mucronata varieties whole plant		+	
Pieris species and varieties whole plant		+	
Prunus laurocerasus varieties whole plant		+	fresh fruit not poisonous! like sloe
Prunus serotina whole plant except cherries		+	cherries repugnantly bittersweet
Rhamnus species and varieties whole plant		+	berries repugnantly bitter
Rhododendron species and varieties whole plant		+++	unpleasant
Rhus species and varieties milky sap		+	corrosive bark and roots
Robinia species and varieties whole plant		++	pleasantly sweetish
Sambucus species and varieties whole plant, except ripe berries!		(+)	do not use unripe fruit!
Skimmia japonica varieties whole plant		(+)	aromatic
Sophora japonica whole plant		++	
Symphoricarpos species and varieties berries		(+)	slimy-empty
Ulex europaeus whole plant		++	fruits like beans
Viburnum species and varieties bark, leaves		+	berries bittersweet, no problems when cooked
Vinca species and varieties whole plant		+	unpleasant
Wisteria species and varieties whole plant		+	fruits like beans

Genus/species/variety plant part	Poisonous	Degree of poison	Taste
2. Conifers			
Chamaecyparis species and varieties whole plant		+	aromatic-bitter
Cupressocyparis in species and varieties whole plant		+	bitter
Juniperus horizontalis whole plant		+++	aromatic-bitter
Juniperus media in varieties whole plant		+++	berries spicy, peppery hot
Juniperus sabina varieties whole plant		+++!	berries bitter-spicy
Juniperus virginiana varieties whole plant		+++	berries bitter-spicy
Microbiota decussata whole plant		+	aromatic-bitter
Taxus species and varieties whole plant, except red seed case, but kernel poisonous!		+++	unpleasant
Thuja species and varieties wood, cane, twigs		+	

Explanation of symbols:

+++ = extremely poisonous

++ = very poisonous

+ = poisonous

(+) = slightly poisonous





19 Plants with leaf colours other than green

Red foliage (black-red, dark-red, brown-red, bronze-red)

The chlorophyll is covered by the red cell pigment anthocyanine in plants with red foliage. These varieties behave much the same as the green varieties, though their final size is smaller.

Colour development:

The spring shoots are light, bright red; the leaf surface has a slight black-metallic shimmer. The chlorophyll is stronger in summer, giving the leaves a bronze-red to green mixture. Young leaves on the sunny side are reddest, while the older ones on the shady side are greenest. In the interest of an intense red hue, it pays to cut special red-foliage shrubs generously in spring.

Genus/species/variety	Leaf colour
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1. Deciduous plants

Acer cappadocicum 'Rubrum'	red
Acer griseum	brown-red shoots
Acer palmatum 'Atropurpureum'	crimson-red
Acer palmatum 'Fireglow'	red
Acer platanoides 'Crimson Sentry'	shiny black-red
Acer platanoides 'Deborah'	red shoots
Acer platanoides 'Faassen's Black'	shiny black-red
Acer platanoides 'Royal Red'	crimson-red
Acer platanoides 'Schwedleri'	red shoots
Acer pseudoplatanus 'Atropurpureum'	shoots/underside red-brown
Acer neglectum 'Annae'	red shoots
Fagus sylvatica 'Atropunicea'	metallic copper-red
Fagus sylvatica 'Dawyck Purple'	crimson-brown
Fagus sylvatica 'Purple Fountain'	dark red to brown
Fagus sylvatica 'Purpurea Pendula'	black-red
Fagus sylvatica 'Riversii'	red
Fagus sylvatica 'Swat Magret'	black-red
Malus 'Coccinella'	red
Malus 'Hopa'	red shoots
Malus 'Liset'	red shoots, later bronze
Malus 'Nicoline'	red shoots
Malus 'Profusion'	red shoots
Malus 'Rudolph'	red shoots
Prunus cerasifera 'Nigra'	black-red
Prunus serrulata varieties	shoots brown to dark red, later green
Robinia 'Casque Rouge'	shoots brown, later green

2. Deciduous shrubs

Acer palmatum 'Atropurpureum'	red-brown
Acer palmatum 'Dissectum Garnet'	shoots dark-red
Aronia melanocarpa	shoots crimson-red
Berberis buxifolia 'Nana'	shoots crimson-red
Berberis ottawensis 'Superba'	metallic black-red

Genus/species/variety	Leaf colour
Berberis thunbergii 'Atropurpurea'	red shoots
Berberis thunbergii 'Atropurpurea Nana'	red shoots
Berberis thunbergii 'Bagatelle'	intense crimson-red
Berberis thunbergii 'Red Chief'	brown-red
Calluna vulgaris 'Boskoop'	copper-orange in winter, later orange-yellow
Calluna vulgaris 'Carmen'	brown in winter, later dark green
Calluna vulgaris 'County Wicklow'	bronze in winter, then grey-green
Calluna vulgaris 'J. H. Hamilton'	reddish in winter, then green
Calluna vulgaris 'Liebestraum'	bronze in winter, then grey
Calluna vulgaris 'Marlies'	bronze in winter, then grey-green
Calluna vulgaris 'Sonnyboy'	orange in winter, then yellowish green
Calluna vulgaris 'Spring Torch'	orange-red starting in spring
Clematis montana 'Rubens'	red shoots
Cornus alba 'Kesselringii'	brown shoots, later bronze
Corylus avellana 'Rotblättrige Zellernuss'	red-brown
Corylus maxima 'Purpurea'	shiny black-red
Cotinus coggygia 'Royal Purple'	metallic black-red
Erica cinerea 'Katinka'	bronze-red in winter
Erica cinerea 'Pink Ice'	bronze-red in winter
Euonymus fortunei 'Coloratus'	crimson-red on underside of leaf in winter
Euonymus fortunei 'Dart's Blanket'	crimson-red on underside of leaf in winter
Malus 'Eleyi'	reddish shoots, later dark green
Malus 'Makamik'	red shoots, later bronze
Malus 'Royalty'	dark red
Paeonia suffruticosa	shoots dark red
Pieris japonica 'Forest Flame'	shoots bright red later bronze-green
Pieris japonica 'Red Mill'	shoots shiny bronze-red
Photinia fraseri 'Red Robin'	shoots light red, later bronze-green
Prunus cerasifera 'Nigra'	black-red
Prunus 'Trailblazer'	shoots green, later bronze
Prunus cistena	shoots dark red, later brown
Rosa glauca	red shoots, later bronze to blue
Sambucus nigra 'Black Lace'	deep purple
Spiraea bumalda 'Froebelli'	shoots bronze, later green
Spiraea bumalda 'Goldflame'	shoots bronze-red, later yellow-green
Spiraea japonica 'Golden Princess'	red shoots, then bronze-red
Weigela florida 'Purpurea'	shoots dark red, later brown-red

3. Conifers

Microbiota decussata	brick-red in winter, green starting in spring
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19 Plants with leaf colours other than green

Yellow foliage

(green-yellow, yellow spots, margins or stripes or pure yellow)

Colour development

The new needles or leaves are a bright golden yellow in spring, losing their brightness in summer as the deep yellow turns a green-gold or yellow-green. The colour is best in sunny or lightly shady areas. In the shade, the yellow disappears. As there is considerably less chlorophyll in yellow leaves than in green ones, yellow varieties grow more slowly than green varieties and remain smaller. Yellow-foliage plants require a fresh to moist, cool area; dry soil and air and extreme frost conditions should be avoided.

Genus/species/variety	Leaf colour
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1. Deciduous plants

<i>Acer cappadocicum</i> 'Aureum'	yellow
<i>Acer negundo</i> 'Aureo-variegatum'	spotted
<i>Acer negundo</i> 'Odessanum'	shoots yellow, then green-yellow
<i>Alnus incana</i> 'Aurea'	yellow-green, later light green
<i>Catalpa bignonioides</i> 'Aurea'	shoots bright-yellow, later greenish greenish yellow
<i>Fagus sylvatica</i> 'Dawyck Gold'	shoots golden yellow, then yellow-green
<i>Fraxinus excelsior</i> 'Jaspidea'	shoots yellow, then yellow-green
<i>Gleditsia triacanthos</i> 'Sunburst'	shoots bright yellow, then yellow-green
<i>Robinia pseudoacacia</i> 'Frisia'	shoots golden yellow, then yellow-green
<i>Ulmus carpinifolia</i> 'Wredei'	shoots golden yellow, then yellow-green

2. Shrubs

<i>Aucuba japonica</i> 'Variegata'	spotted
<i>Calluna vulgaris</i> 'Gold Haze'	bright yellow in winter, then greenish yellow
<i>Cornus alba</i> 'Spaethii'	yellow margins
<i>Corylus avellana</i> 'Aurea'	shoots bright yellow, then yellow-green
<i>Elaeagnus pungens</i> 'Maculata'	yellow spots
<i>Euonymus fortunei</i> 'Emerald'n Gold'	yellow spots
<i>Euonymus fortunei</i> 'Sunspot'	yellow leaf centre
<i>Hebe ochracea</i>	yellow-green to golden yellow
<i>Hedera colchica</i> 'Dentata Variegata'	yellow to cream margins
<i>Hedera helix</i> 'Goldheart'	green margin, yellow centre
<i>Ilex altaclerensis</i> 'Golden King'	yellow margins
<i>Ilex crenata</i> 'Golden Gem'	shoots bright yellow, later green-yellow
<i>Ligustrum ovalifolium</i> 'Aureum'	yellow veins
<i>Lonicera japonica</i> 'Aureoreticulata'	shoots red, then golden yellow
<i>Sambucus canadensis</i> 'Aurea'	first golden yellow, then yellow-green

Genus/species/variety	Leaf colour
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<i>Spiraea bumalda</i> 'Goldflame'	citrus-yellow
<i>Spiraea japonica</i> 'Goldmound'	cream-yellow to white
<i>Weigela florida</i> 'Nana Variegata'	cream-yellow to white margins

3. Conifers

<i>Cedrus atlantica</i> 'Aurea'	yellow tips, otherwise yellow-green
<i>Chamaecyparis lawsoniana</i> 'Alumigold'	golden yellow
<i>Chamaecyparis lawsoniana</i> 'Ellwood's Gold'	deep golden yellow
<i>Chamaecyparis laws.</i> 'Golden Wonder'	green-yellow
<i>Chamaecyparis lawsoniana</i> 'Kelleriis Gold'	golden yellow
<i>Chamaecyparis lawsoniana</i> 'Lane'	yellow outside, yellow-green inside
<i>Chamaecyparis lawsonia</i> 'Stewartii'	bright golden yellow
<i>Chamaecyparis pisifera</i> 'Filifera Aurea Nana'	golden yellow
<i>Chamaecyparis pisifera</i> 'Sungold'	golden yellow to yellowish green
<i>Chamaecyparis pisifera</i> 'Plumosa Aurea'	golden yellow
<i>Juniperus chinensis</i> 'Plumosa Aurea'	golden yellow
<i>Juniperus media</i> 'Old Gold'	yellow to yellowish green
<i>Juniperus media</i> 'Pfitzeriana Aurea'	yellow shoots
<i>Picea orientalis</i> 'Aurea'	yellow to yellowish green
<i>Taxus baccata</i> 'Aureovariegata'	yellow to light green
<i>Taxus baccata</i> 'Dovostonii Aurea'	yellow needle margins
<i>Taxus baccata</i> 'Fastigiata Aureomarginata'	bright golden yellow
<i>Taxus baccata</i> 'Semperaurea'	citrus-yellow
<i>Taxus baccata</i> 'Summergold'	yellow needle margins
<i>Taxus baccata</i> 'Washingtonii'	first yellow, then light green
<i>Thuja occidentalis</i> 'Europe Gold'	shoots golden yellow, then yellow-green
<i>Thuja occidentalis</i> 'Sunkist'	initially yellow-green, later fresh green
<i>Thuja orientalis</i> 'Aurea'	golden yellow, bronze yellow in winter
<i>Thuja plicata</i> 'Aurea'	yellow-green, white stripes

White foliage

(white spots, margins or stripes)

See details on the yellow-foliage plants. In addition to the chlorophyll, the yellow pigment is also missing. The colour is caused by colourless cell elements.

Genus/species/variety	Colour of shoots
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1. Deciduous plants

<i>Acer negundo</i> 'Variegatum'	white spots
<i>Acer platanoides</i> 'Drummondii'	broad white leaf margins
<i>Aralia elata</i> 'Variegata'	cream-white margins

2. Shrubs

<i>Actinidia kolomikta</i>	first pink, then white leaf halves
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Plants with leaf colours other than green 19

Genus/species/variety	Colour of shoots
<i>Aralia elata</i> 'Variegata'	cream-white margins
<i>Cornus alba</i> 'Elegantissima'	white margins
<i>Euonymus fortunei</i> 'Emerald Gaiety'	white margins, somewhat pink
<i>Euonymus fortunei</i> 'Variegatus'	white with pink spots
<i>Ilex aquifolium</i> 'Argentea Marginata'	white margins
<i>Pieris japonica</i> 'Variegata'	white margins
<i>Weigela florida</i> 'Nana Variegata'	grey to white margins

White or grey tomentose leaves

The leaves have the usual green hues, while the leaf laminae are only white or grey due to the dense layer of tomentose hairs, silvery-shiny scales or a waxy coating. These coverings serve to protect the leaves from evaporation, heat and cold.

Colour development

During shooting, the young leaves have dense, conspicuous white hairs on both sides. Starting in late summer, the leaf organs are dull green on top and blue or grey-green only on the underside. It is normal for this colour to disappear; it comes back every year.

Genus/species/variety	Leaf colour
1. Deciduous plants	
<i>Acer saccharinum</i> varieties	underside
<i>Acer rubrum</i>	underside
<i>Alnus incana</i>	shoots/underside
<i>Elaeagnus angustifolia</i>	both sides
<i>Hippophae rhamnoides</i>	both sides
<i>Malus tschonoskii</i>	shoots/underside
<i>Populus alba</i> 'Nivea'	shoots/underside
<i>Pyrus nivalis</i>	underside
<i>Pyrus regelii</i>	shoots/underside
<i>Pyrus salicifolia</i>	both sides
<i>Pyrus salicifolia</i> 'Pendula'	both sides
<i>Quercus alba</i>	underside white-green
<i>Salix alba</i> varieties	both sides
<i>Salix caprea</i>	underside
<i>Salix smithiana</i>	underside
<i>Salix viminalis</i>	underside
<i>Sorbus aria</i> varieties	shoots/underside
<i>Sorbus intermedia</i> varieties	underside
<i>Sorbus thuringiaca</i> 'Fastigiata'	underside
<i>Tilia tomentosa</i> varieties	shoots/underside

2. Shrubs

<i>Buddleja alternifolia</i>	both sides
<i>Buddleja davidii</i> varieties	shoots/underside
<i>Calluna vulgaris</i> varieties	both sides
<i>Caryopteris clandonensis</i> varieties	both sides

Gattung / Art / Sorte	Blattfärbung
<i>Cotoneaster dielsianus</i>	underside
<i>Cotoneaster franchetii</i>	shoots/underside
<i>Cotoneaster multiflorus</i>	underside
<i>Cotoneaster salicifolius floccosus</i>	underside
<i>Cotoneaster sternianus</i>	shoots/underside
<i>Cotoneaster watereri</i> varieties	underside
<i>Elaeagnus angustifolia</i>	both sides
<i>Elaeagnus commutata</i>	both sides
<i>Elaeagnus ebbingei</i>	shoots/underside
<i>Elaeagnus multiflora</i>	underside
<i>Erica tetralix</i> varieties	shoots/underside
<i>Hamamelis mollis</i>	underside
<i>Hippophae rhamnoides</i>	both sides
<i>Hydrangea sargentiana</i>	shoots/underside
<i>Lavandula angustifolia</i> varieties	shoots/underside
<i>Lycium barbarum</i>	both sides
<i>Perovskia abrotanoides</i>	both sides
<i>Potentilla fruticosa mandshurica</i>	both sides
<i>Salix acutifolia</i> 'Pendulifolia'	underside
<i>Salix aurita</i>	underside
<i>Salix caprea</i> varieties	underside
<i>Salix cinerea</i>	shoots/underside
<i>Salix daphnoides</i> varieties	underside
<i>Salix elaeagnos</i>	shoots/underside
<i>Salix hastata</i> 'Wehrhahnii'	underside
<i>Salix lanata</i>	both sides
<i>Salix repens argentea</i>	both sides
<i>Salix rosmarinifolia</i>	shoots/underside
<i>Salix smithiana</i>	underside
<i>Salix viminalis</i>	underside
<i>Viburnum burkwoodii</i>	underside
<i>Viburnum carlcephalum</i>	underside
<i>Viburnum carlesii</i>	underside
<i>Viburnum lantana</i>	shoots/underside
<i>Viburnum rhytidophyllum</i>	underside

Blue and blue-green to silver-grey foliage

(blue needles, silvery blue, blue-green or grey)

The blue colours, especially on the needles of conifers, are caused by a dense wax coating that makes the green leaf organs appear strong blue or silvery blue. The colours are most intense on one-year shoots in full sunlight.

Genus/species/variety	Leaf-/needle colour
1. Deciduous plants	
<i>Berberis</i> - evergreen species and varieties	only leaf underside, blue, greyblue
<i>Rosa glauca</i>	shoots bluish red, then blue-green
<i>Salix acutifolia</i> 'Pendula'	blue underneath





19 Plants with leaf colours other than green

Genus/species/variety	Leaf-/needle colour
1. Deciduous plants	
<i>Salix daphnoides</i>	blue underneath
<i>Salix fragilis</i>	blue underneath
<i>Salix purpurea</i> varieties	blue underneath
2. Conifers	
<i>Abies concolor</i>	bluish grey
<i>Abies koreana</i>	silvery white underneath
<i>Abies procera</i> 'Glauca'	silvery-blue/blue
<i>Abies veitchii</i>	bluish white underneath
<i>Cedrus atlantica</i> varieties	silvery-blue
<i>Cedrus deodara</i> 'Pendula'	blue-green
<i>Chamaecyparis lawsoniana</i> 'Alumii'	blue / bluish green
<i>Chamaecyparis lawsoniana</i> 'Columnaris'	bluish grey
<i>Chamaecyparis laws.</i> 'Columnaris Glauca'	blue to blue-green
<i>Chamaecyparis lawsoniana</i> 'Spek'	blue to blue-green
<i>Chamaecyparis laws.</i> 'Tharandensis Caesia'	blue-green
<i>Chamaecyparis pisifera</i> 'Boulevard'	silvery-blue
<i>Juniperus chinensis</i> 'Blue Alps'	silvery-blue
<i>Juniperus communis</i> 'Hibernica'	grey-blue
<i>Juniperus communis</i> 'Suecica'	grey-blue
<i>Juniperus horizontalis</i> 'Andorra Compact'	grey-green/blue
<i>Juniperus horizontalis</i> 'Wiltonii'	intense blue
<i>Juniperus chinensis</i> 'Blaauw'	bluish grey
<i>Juniperus media</i> 'Hetzii'	bluish grey
<i>Juniperus sabina</i> 'Rockery Gem'	blue-green
<i>Juniperus sabina</i> 'Tamariscifolia'	blue-green
<i>Juniperus scopulorum</i> 'Wichita Blue'	grey, silver
<i>Juniperus squamata</i> 'Blue Carpet'	intense blue
<i>Juniperus squamata</i> 'Blue Star'	intense silvery blue
<i>Juniperus squamata</i> 'Meyeri'	silvery blue
<i>Juniperus virginiana</i> 'Glauca'	grey
<i>Juniperus virginiana</i> 'Grey Owl'	grey
<i>Juniperus scopulorum</i> 'Skyrocket'	grey/ blue-green
<i>Picea abies</i> 'Pumila Glauca'	blue-green / green
<i>Picea glauca</i> 'Echiniformis'	blue-green
<i>Picea pungens</i> 'Edith'	blue-grey
<i>Picea pungens glauca</i>	blue to blue-grey
<i>Picea pungens</i> 'Glauca Globosa'	silvery blue
<i>Picea pungens</i> 'Hoopsii'	intense blue to silvery blue
<i>Picea pungens</i> 'Koster'	bluish green/silvery blue
<i>Picea pungens</i> 'Oldenburg'	silvery blue
<i>Pinus cembra</i>	blue-green
<i>Pinus monticola</i> 'Ammerland'	silvery blue
<i>Pinus monticola</i> 'Skyline'	blue-green
<i>Pinus parviflora</i> 'Glauca'	silvery blue
<i>Pinus parviflora</i> 'Negishi'	grey-blue
<i>Pinus peuce</i>	grey-blue
<i>Pinus pumila</i> 'Glauca'	grey/blue-green

Genus/species/variety	Leaf-/needle colour
<i>Pinus schwerinii</i>	blue-green
<i>Pinus strobus</i>	blue-green
<i>Pinus strobus</i> 'Macopin'	blue-green
<i>Pinus strobus</i> 'Radiata'	blue-green
<i>Pinus sylvestris</i>	grey-green
<i>Pinus sylvestris</i> 'Fastigiata'	blue-green
<i>Pinus sylvestris</i> 'Norske Typ'	bluish grey
<i>Pinus sylvestris</i> 'Watereri'	grey/ blue-green
<i>Pinus wallichiana</i>	blue-green
<i>Pinus wallichiana</i> 'Densa Hill'	blue-green
<i>Pseudotsuga menziesii caesia</i>	grey-green
<i>Sequoiadendron giganteum</i> 'Glaucum'	blue to blue-grey
<i>Tsuga mertensiana</i>	grey/ blue-green
<i>Tsuga mertensiana</i> 'Glauca'	silvery-blue

20 Plants that shoot early

Plants that shoot early in the year not only create a first atmosphere of spring, they also fulfill an important function in urban areas. Normally, plants in central Europe have foliage from the beginning/middle of May to the middle/end of October (including autumn colours), i.e. for some five to six months. Plants that shoot late—from the end of May to the beginning of June—only have foliage for four months. As the species that shoot especially early shorten the bare winter period considerably, these plants play an essential role. No exactly defined shooting period can be given since the early shooting plants are able to start developing their leaves several weeks early when early spring is mild.

Note: Leaves that appear before the last late frost in the first third of May can be damaged by the frost. Indigenous plants are well adapted, and their leaves are seldom destroyed. Even when the shoots are killed by frost in April, the plants form new shoots after a short time, leaving not a trace of the original damage. This does not, however, apply for the flowers.

Genus/species/variety	Shoots	Colour
1. Deciduous trees		
<i>Aesculus flava</i> varieties	IV	light green
<i>Acer platanoides</i>	IV	green
<i>Acer rubrum</i>	IV	bronze-red
<i>Betula</i> species and varieties	IV	light green
<i>Cercidiphyllum japonicum</i>	B IV	red
<i>Malus toringo sargentii</i> - seedling	IV	green
<i>Populus balsamifera</i>	B IV	yellow-green
<i>Populus berolinensis</i>	B IV	yellow-green
<i>Populus canadensis</i> varieties	IV	bronze-red
<i>Populus nigra</i> varieties	E VI/B V	yellow-green
<i>Populus simonii</i>	E III/B IV	green
<i>Prunus padus</i>	E III/B IV	light green
<i>Pterocarya fraxinifolia</i>	IV	green





Genus/species/variety	Shoots	Colour
Pyrus species and varieties	(E III) B IV	green silver
Salix alba 'Tristis'	B IV	yellow-green
2. Shrubs		
Acanthopanax sieboldianus	B IV	green
Aesculus parviflora	E IV	bronze-red
Amelanchier species and varieties	IV	silver-grey to red
Berberis thunbergii varieties	E III/B IV	green
Buddleja davidii varieties	B IV	silver
Caragana arborescens	B IV	light green
Chaenomeles species and varieties	B IV	bronze-red
Cotoneaster species and varieties	B IV	grey-green
Crataegus laevigata varieties	IV	green
Crataegus monogyna varieties	B IV	green
Crataegus coccinea	B IV	green
Cytisus beanii	IV	green
Cytisus kewensis	IV	grey-green
Decaisnea fargesii	IV	grey-green
Deutzia gracilis	B IV	green
Euonymus europaeus	B IV	green
Euonymus planipes	B IV	green
Heptacodium miconioides	IV	green
Hydrangea arborescens varieties	IV	green
Hydrangea hybrids varieties	E III/B IV	green
Kerria japonica varieties	B IV	green
Ligustrum species and varieties	B IV	green
Lonicera species and varieties	E III/B IV	green
Malus species and varieties	IV	red
Paeonia suffruticosa varieties	E III/B IV	bronze-red
Philadelphus hybrids	IV	grey-green
Pieris japonica varieties	IV	red
Potentilla fruticosa varieties	E III/B IV	silvery-green
Prunus - redleaf varieties	IV	black-red
Prunus species and varieties	IV	green
Rhodotypos scandens	IV	green
Ribes species and varieties	E III/B IV	green
Rosa species and varieties	E III/B IV	red or green
Rosa glauca	IV	blue
Rubus caesius	B IV	green
Salix alba 'Kermesina'	IV	green-gelb
Salix balsamifera mas	B IV	light green
Sambucus nigra	E III/B IV	bronze-red
Sambucus racemosa varieties	IV	bronze-red
Sorbaria sorbifolia	E III/B IV	green to red
Spiraea species and varieties	E III/B IV	many colours
Stephanandra species and varieties	IV	green
Symphoricarpos species and varieties	IV	green
Syringa species and varieties	IV	green
Viburnum lantana	IV	grey
Vinca species and varieties	E III/B IV	green

Genus/species/variety	Shoots	Colour
3. Climbers		
Clematis species and varieties	IV	green or red
Hydrangea petiolaris	IV	green
Jasminum nudiflorum	IV	green
Lonicera species and varieties	E III/B IV	green or grey
Parthenocissus species and varieties	IV	bronze-red
4. Conifers		
Cedrus deodara varieties	IV	green
Larix decidua	B IV	light green
Larix kaempferi varieties	IV	blue-green
Metasequoia glyptostroboides	IV	light green

Explanation of symbols: I-XII = Month from January to December /
B = beginning of the month / E = end of the month

21 Plants that shoot late

Late-shooting plants form their leaf organs from the second half of May on, sometimes not until the beginning of June depending on the weather, some six to eight weeks later than the plants that shoot early. The delayed leaf development is not to be seen as a disadvantage in all cases: on benches in urban parks, the park visitors are hungry for sun in spring and thankful that the first rays are not blocked until the summer heat sets in. Along similar lines, the same could be said for trees near buildings, for the sun penetrates the rooms in the transitional seasons but are prevented from entering in summer by the foliage. Late-shooting plants are seldom damaged by late frost although occasional leaf loss that was subsequently compensated for has been observed. The new shoots are green as a rule; colourful mixtures as seen among the early-shooting plants are rare.

Note

Only summer green plants are listed as the effect of late shoots has no considerable importance for the use and planning with evergreen deciduous trees and conifers.

See table next page





21 Plants that shoot late

Genus/species/variety	Colour of shoots
1. Trees	
Ailanthus altissima	bronze-red
Castanea sativa	light green
Catalpa bignonioides	very late, end of May
Crataegus lavallei 'Carrierei'	green
Euodia hupehensis	light green
Fraxinus species and varieties	
Ginkgo biloba	light green
Gleditsia triacanthos varieties	
Gymnocladus dioicus	bronze-red
Juglans cinerea	reddish-green
Juglans nigra	
Juglans regia	aromatic
Liquidambar styraciflua	light green
Nyssa sylvatica	light green
Platanus acerifolia	grey
Prunus serotina	light green
Quercus species and varieties	light green or reddish
Robinia species and varieties	
Sophora japonica varieties	grey-green
2. Shrubs	
Callicarpa bodinieri varieties	
Chionanthus virginicus	
Clethra alnifolia	light green
Cotinus coggygria varieties	red to black-red
Hibiscus syriacus	light green
Hydrangea quercifolia	grey-green
Lеспедеза thunbergii	light green
Ptelea trifoliata	light green, aromatic
3. Climbers	
Campsis species and varieties	bronze-red
Celastrus orbiculatus	light green

22 Plants with autumn colours

The decomposition of chlorophyll in autumn leaves behind xanthophyll and carenone, which are not dissolved. They cause the yellow or orange hues. The red pigments are due to anthocyanine, which is created in autumn by the changes in metabolism in the leaves. The tendency to autumn colours is genetic. Plants that lose their green or grey leaves cannot be brought to produce spectacular colours under even the most favourable conditions.

Note:

Autumn colours do not have set limits, but rather are determined by local conditions. Sunny areas further the colours, while the colours are very modest in the shade. The colours are enhanced in autumn by warm, sunny days followed by cool nights. The colours may sometimes be sparse if the autumn

days are regularly mild and rainy. Colouring time depends on the weather and thus varies. The sequence of colour development is, however, almost always the same. Acer rubrum, for instance, principally turns colour first, followed by Parthenocissus quinquefolia in second position; this can happen in the last week of August or as late as mid-September. The other plants then follow with some delay.

Genus/species/variety	Main colour
1. Large trees	
Acer freemanii 'Autumn Blaze'	orange-red
Acer platanoides	yellow, orange
Acer pseudoplatanus varieties	yellow
Acer saccharinum	yellow, green-yellow
Acer saccharum	yellow, orange
Aesculus hippocastanum	yellow
Betula species	yellow
Castanea sativa	yellow, yellow-brown
Fagus sylvatica varieties	yellow-orange, yellow-brown
Fraxinus pennsylvanica 'Cimmzam'	red, orange
Gleditsia triacanthos	yellow-green
Juglans nigra	yellow
Liriodendron tulipifera	yellow, yellow-brown
Pterocarya fraxinifolia	yellow-green
Populus nigra	yellow
Quercus alba	crimson to brown-violet
Quercus robur	yellow-brown
Quercus rubra	orange-red
Tilia cordata	yellow
Tilia platyphyllos	yellow
Tilia europaea	yellow
Ulmus species and varieties	yellow
2. Medium-size trees	
Acer campestre	yellow, yellow-orange
Acer cappadocicum varieties	yellow
Acer freemanii 'Armstrong'	orange-red
Acer freemanii 'Celzam'	red, yellow
Acer japonicum varieties	orange-red
Acer platanoides varieties	yellow
Acer platanoides - redleaf varieties	bronze-red
Acer rubrum varieties	red, orange
Acer saccharinum 'Wieri'	yellow, yellowgreen
Aesculus flava varieties	yellow, orange
Alnus spaethii	violet-red, bronze
Betula species and varieties	yellow
Carpinus betulus varieties	yellow
Cercidiphyllum japonicum	yellow, yellow-orange
Corylus colurna	yellow
Euodia hupehensis	yellow
Fagus sylvatica varieties	yellow-orange, yellowbrown
Fraxinus americana 'Autumn Purple'	red, violet





Genus/species/variety	Main colour
Fraxinus americana 'Skyline'	orange-red
Fraxinus angustifolia 'Raywood'	violet-brown
Fraxinus pennsylvanica 'Patmore'	yellow
Fraxinus pennsylvanica 'Summit'	yellow
Gymnocladus dioicus	yellow
Liquidambar styraciflua	dark red, red, orange
Liquidambar styraciflua 'Moraine'	violet, yellow
Nyssa sylvatica	yellow, orange
Ostrya carpinifolia	yellow
Phellodendron amurense	yellow
Populus tremula	yellow, yellow-orange
Prunus avium	yellow, orange
Pyrus calleryana varieties	orange-red, red
Quercus coccinea	red, orange
Quercus palustris	yellow-orange
Quercus palustris 'Green Pillar'	red
Sorbus aucuparia	yellow-orange, red
Sorbus domestica	orange-red
Tilia species and varieties	yellow
Tilia henryana	yellow
Zelkova serrata varieties	red, orange, yellow

3. Small trees

Acer buergerianum	orange-yellow, red
Acer campestre 'Elsrijk'	yellow
Acer campestre varieties	yellow
Acer ginnala	red, orange
Acer griseum	red
Acer palmatum	red
Acer monspessulanum	yellow, red
Acer japonicum varieties	orange, red
Acer pensylvanicum	yellow
Acer rufinerve	orange, red
Acer rubrum	red, orange
Acer neglectum 'Annae'	yellow, yellow-orange
Acer tataricum	red, yellow
Aesculus carnea 'Briotii'	yellow
Amelanchier laevis	yellow-orange
Amelanchier lamarckii	orange, yellow
Aralia elata varieties	yellow-orange
Catalpa bignonioides varieties	yellow
Cercidiphyllum japonicum	yellow, yellow-orange
Cornus alternifolia	violet-red, yellow
Cornus controversa	violet
Cornus florida	bronze-red
Cornus kousa varieties	orange-red
Crataegus monogyna	red, yellow
Crataegus coccinea	yellow-orange
Crataegus crus galli	orange-red
Fagus sylvatica 'Purpurea Pendula'	orange-brown

Genus/species/variety	Main colour
Fraxinus americana microcarpa	violet, yellow
Fraxinus americana 'Autumn Applause'	red
Koelreuteria paniculata	yellow-orange
Liquidambar styraciflua 'Gum Ball'	red, yellow
Liquidambar styraciflua 'Slender Silhouette'	red, orange
Malus hybrids	yellowish
Malus tschonoskii	red-orange, red
Nothofagus antarctica	yellow, green-yellow
Parrotia persica	red, yellow-orange
Phellodendron amurense	yellow
Prunus hillieri 'Spire'	orange, red
Prunus maackii varieties	orange-yellow
Prunus padus	yellow, orange
Prunus sargentii	orange-red
Prunus serrulata varieties	yellow-orange
Pyrus calleryana varieties	orange-red, red
Pyrus communis varieties	orange-yellow, red-violet
Pyrus nivalis	red
Quercus palustris 'Green Dwarf'	red, yellow
Rhus species and varieties	orange, red
Sorbus species and varieties	orange-red
Stewartia pseudocamellia	yellow-orange, red
Tilia mongolica	yellow

4. Large shrubs

Acer ginnala	red, orange
Acer japonicum 'Aconitifolium'	orange-red
Acer palmatum	red
Acer rufinerve	orange-red
Aesculus parviflora	yellow
Amelanchier species and varieties	yellow-orange
Aralia elata species and varieties	yellow-orange
Berberis ottawensis varieties	red
Cornus alternifolia	violet-red bis yellow
Cornus controversa	violet-bronze-red, yellow
Cornus florida varieties	red-brown
Cornus kousa varieties	orange-red
Cornus nuttallii	yellow-orange, red
Cornus officinalis	red
Cornus sanguinea	red
Corylus avellana	yellow, yellow-orange
Cotinus coggygria varieties	orange-red
Cotoneaster bullatus	orange-yellow, red
Crataegus laevigata varieties	bronze-red
Crataegus monogyna	red, yellow
Crataegus coccinea	yellow-orange
Crataegus crus galli	orange-red
Euonymus europaeus	bronze-red, red
Euonymus planipes	red, pink





22 Plants with autumn colours

Genus/species/variety	Main colour
4. Large shrubs	
Hamamelis species and varieties	yellow to orange-red
Mespilus germanica	yellow-brown
Nothofagus antarctica	green-yellow, yellow
Parrotia persica varieties	red, orange-yellow
Photinia villosa	red
Prunus species and varieties	orange-red
Ptelea trifoliata	yellow-green, yellow
Rhus typhina	orange, red
Salix triandra	yellow
Sorbus species and varieties	orange-red
Styrax japonicus	red
Viburnum lantana	green-yellow, red
Viburnum opulus	orange-red, yellow
5. Shrubs	
Berberis ottawensis 'Superba'	orange
Berberis thunbergii	yellow-orange, red
Berberis thunbergii 'Atropurpurea' varieties	orange-red
Berberis vulgaris	yellow-orange, red
Corylopsis spicata	yellow
Cotinus coggygria 'Royal Purple'	red
Cotoneaster species and varieties	yellow-orange, red
Enkianthus campanulatus	yellow-orange, red
Euonymus alatus	red
Euonymus yedoensis	pink, red
Euonymus phellomanus	orange
Fothergilla major	yellow-orange, red
Hydrangea quercifolia	orange-red
Rhododendron hybrids (Azaleen)	orange-red, red, yellow
Rhus typhina 'Dissecta'	red-orange
Salix sachalinensis 'Sekka'	yellow-green, yellow
Spiraea species and varieties	violet-brown, brown-red
Syringa species and varieties	crimson
Viburnum bodnantense varieties	bronze-red
Viburnum farreri	blood-red
Viburnum plicatum varieties	violet-red, orange
6. Small shrubs	
Aronia species and varieties	red, orange
Corylopsis pauciflora	yellow
Cotoneaster horizontalis	red
Fothergilla gardenii	yellow-orange, orange-red, red
Kerria japonica	yellow
Spiraea species and varieties	violet-red, orange
Stephanandra species and varieties	yellow
Syringa species and varieties	crimson
Vaccinium species and varieties	yellow, orange

Genus/species/variety	Main colour
7. Dwarf shrubs	
Berberis thunbergii 'Atrocrimsonea'	orange-red
Cotoneaster adpressus	red
Cotoneaster praecox	red
Spiraea species and varieties	violet-red, orange
8. Climbers	
Actinidia arguta	yellow
Actinidia chinensis	yellow-brown
Campsis species and varieties	yellow-green, yellow
Celastrus orbiculatus	yellow
Clematis species and varieties	pale yellow
Hydrangea petiolaris	yellow
Parthenocissus quinquefolia varieties	red
Parthenocissus tricuspidata 'Veitchii'	red-orange
Rubus caesius	orange-red
Rubus fruticosus	orange-red
Vitis coignetiae	orange-red
9. Conifers	
Ginkgo biloba	yellow
Larix decidua	yellow
Larix kaempferi varieties	yellow, yellow-orange
Metasequoia glyptostroboides	orange-brown
Pseudolarix amabilis	yellow
Taxodium distichum	orange-brown, orange

23 Evergreen broad-leaf plants

In this table, evergreen plants are listed. The leaves stay on the plants during winter. In very exposed areas and when winter temperatures fall below -15°C, some species can lose some or all of their leaves. These are listed as 'nearly evergreen'.

Note:

All evergreen plants can suffer when a long frost period occurs. It is essential that evergreens be thoroughly watered in late autumn and that the moisture content of the soil be checked during the mild phases of winter.





Evergreen broad-leaf plants

Genus/species/variety	Nearly evergreen	Evergreen
1. Small trees		
Ilex aquifolium varieties		+
Quercus turneri 'Pseudoturneri'	+	
2. Large shrubs		
Bamboo species and varieties		+
Berberis julianae		+
Buxus sempervirens varieties		+
Cotoneaster salicifolius varieties	+	+
Cotoneaster watereri varieties	+	+
Ilex altaclerensis varieties		+
Ilex aquifolium varieties		+
Ligustrum ovalifolium	+	
Ligustrum vulgare varieties	+	
Magnolia grandiflora 'Blanchard'		+
Prunus laurocerasus varieties		+
Prunus lusitanica varieties		+
Prunus lusitanica		+
Pyracantha species and varieties	+	
Rhododendron species and varieties		+
Stranvaesia davidiana		+
3. Shrubs		
Aucuba japonica varieties		+
Bamboo species and varieties		+
Berberis species and varieties	+	+
Cotoneaster franchetii	+	
Cotoneaster sternianus	+	
Elaeagnus multiflora	+	
Hedera helix 'Arborescens'		+
Ilex aquifolium varieties		+
Ilex crenata varieties		+
Ilex meserveae varieties		+
Kalmia latifolia varieties		+
Mahonia bealei		+
Osmanthus heterophyllum		+
Photinia fraseri 'Red Robin'		+
Pieris japonica varieties		+
Prunus laurocerasus varieties		+
Pyracantha species and varieties	+	
Rhododendron species and varieties	+	+
Rubus fruticosus	+	
Viburnum burkwoodii	+	
Viburnum 'Pragense'	+	+
4. Small shrubs		
Bamboo species and varieties		+
Berberis species and varieties		+
Ceanothus species and varieties	+	
Cotoneaster species and varieties	+	+

Genus/species/variety	Nearly evergreen	Evergreen
Daphne burkwoodii	+	
Elaeagnus ebbingei	+	+
Elaeagnus pungens varieties		+
Escallonia species and varieties	+	+
Euonymus fortunei varieties		+
Hypericum 'Hidcote'	+	
Hypericum patulum henryi	+	
Ilex crenata varieties		+
Ilex meserveae varieties		+
Kalmia angustifolia varieties		+
Kalmia latifolia varieties		+
Ledum palustre		+
Leucothoë walteri		+
Lonicera japonica repens	+	
Lonicera pileata	+	+
Lonicera nitida varieties	+	+
Mahonia aquifolium varieties		+
Pernettya mucronata varieties		+
Photinia fraseri 'Red Robin'		+
Pieris floribunda		+
Pieris japonica varieties		+
Prunus laurocerasus varieties		+
Rhododendron species and varieties	+	+
Skimmia japonica varieties		+
Viburnum tinus		+
5. Dwarf shrubs		
Arctostaphylos uva-ursi		+
Berberis species and varieties	+	+
Calluna vulgaris varieties		+
Cotoneaster dammeri varieties	+	+
Cotoneaster microphyllum varieties		+
Cotoneaster salicifolius varieties	+	+
Daboecia species and varieties		+
Daphne cneorum		+
Empetrum nigrum		+
Erica species and varieties		+
Euonymus fortunei varieties		+
Gaultheria species and varieties		+
Hebe ochracea		+
Hypericum moserianum	+	
Lavandula angustifolia varieties		+
Ligustrum vulgare 'Lodense'	+	
Pachysandra terminalis		+
Rhododendron species and varieties	+	+
Rubus calycinoides	+	+
Vaccinium macrocarpon		+
Vaccinium vitis-idaea		+
Viburnum davidii		+
Vinca species and varieties		+





23 Evergreen broad-leaf plants

Genus/species/variety	Nearly evergreen	Evergreen
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6. Climbers

Akebia quinata	+	
Euonymus fortunei varieties		+
Hedera colchica varieties		+
Hedera helix varieties		+
Hedera helix hibernica		+
Lonicera japonica repens	+	
Lonicera henryi		+
Lonicera japonica varieties	+	+
Rubus fruticosus	+	
Rubus henryi		+

7. Conifers

All, except Ginkgo, Larix, Metasequoia, Pseudolarix und Taxodium



24 Plants that form runners

Subterranean runners are a form of vegetative propagation for plants. Numerous plants use this means of expanding, though it is not always clear whether runners can be formed anywhere, whether the roots have to have been mechanically damaged beforehand such as by digging, or whether runners are only formed under certain climatic conditions. Runners are characteristic of species; *Corylus avellana* seldom forms them while *Cornus sanguinea* forms them regularly at up to 100 per m². "Runners" is the collective term for root suckers. Shoots that spread above ground and take root on contact with the soil, such as those of *Salix*, are called layers.

Genus/species/variety	Distance from centre in m	Type of runners
-----------------------	---------------------------	-----------------

1. Trees

<i>Ailanthus altissima</i>	8 - 12 m	unhindered, like thickets
<i>Alnus incana</i>	4 - 7 m	like clumps
<i>Aralia elata</i> varieties	2 - 4 m	single
<i>Cercis siliquastrum</i>	2 - 3 m	like clumps
<i>Gymnocladus dioica</i>	2 - 6 m	like thickets
<i>Hippophae rhamnoides</i>	2 - 8 m	like thickets, rampant
<i>Liquidambar styraciflua</i>	1 - 2 m	single, rare
<i>Malus hybrids</i> varieties	1 - 4 m	like clumps
<i>Malus sylvestris</i>	2 - 4 m	single to nest-like
<i>Populus alba</i> varieties	6 - 15 m	spread afar to thicket-like
<i>Populus berolinensis</i>	4 - 6 m	like clumps
<i>Populus canescens</i>	6 - 10 m	single
<i>Populus nigra</i> varieties	6 - 8 m	like clumps
<i>Populus tremula</i> var.	10 - 18 m	forest-like, rampant
<i>Prunus avium</i>	12 - 16 m	like nests, numerous
<i>Prunus padus</i>	6 - 12 m	like nests, in hundreds
<i>Pyrus communis</i>	2 - 6 m	like thickets
<i>Pterocarya fraxinifolia</i>	4 - 12 m	like thickets, in thousands
<i>Rhus glabra</i>	1 - 4 m	like thickets
<i>Rhus typhina</i> varieties	1 - 8 m	like thickets
<i>Robinia pseudoacacia</i> var.	1 - 25 m	like thickets, in hundreds
<i>Sorbus aucuparia</i>	2 - 4 m	single
<i>Sorbus torminalis</i>	6 - 8 m	like clumps
<i>Ulmus carpinifolia</i>	4 - 10 m	like clumps
<i>Ulmus laevis</i>	4 - 6 m	like clumps

2. Shrubs

<i>Acanthopanax sieboldianus</i>	0.5 - 1 m	like clumps
<i>Aesculus parviflora</i>	2 - 4 m	like thickets, rampant
<i>Amelanchier ovalis</i>	1 - 2 m	single/like clumps
<i>Aralia elata</i> varieties	2 - 4 m	single
<i>Aronia melanocarpa</i>	0.5 - 1 m	like thickets
<i>Berberis vulgaris</i>	1 - 1.5 m	single
<i>Chaenomeles</i> i. A. u. S.	0.2 - 2 m	like thickets
<i>Cornus canadensis</i>	0.2 - 0.4 m	like nests
<i>Cornus sanguinea</i>	1 - 5 m	like thickets





25 Characteristics of the root system of the trees

Knowledge of the root characteristics of plants is very limited and also controversial. It is thus understandable that the following table cannot provide sufficient, certain answers to all questions. The shape of the roots is genetically determined; one makes distinctions between shallow, cordate, and deep roots, though mixed forms occur in nature. It is not at all true that the root system has the same shape and spread as the branches above ground. If that were true, the spruce would have to have deep roots with a conical structure; in fact, it has shallow roots with a few individual deep roots. The root structures of nursery cultivated plants do not exactly correspond to their natural roots in the wild. Regular training produces a unified root ball, allowing the plants to be prepared for transport and transplanting so they can survive easily. Once they have reached their final destination, they can be expected to develop the type of root characteristic of their species, though not quite as completely as in the wild. All interference around the rooted area should remain limited; the resistance qualities listed should not be taken as a license to dig freely into the root system. For further tips, see the species descriptions.

See table next page

Genus/species/variety	Distance from centre in m	Type of runners
Cornus stolonifera		
'Flaviramea'	1 - 2 m	like thickets
Corylus avellana	0.5 - 1 m	single
Elaeagnus commutata	1 - 5m	like thickets, rampant
Euonymus europaeus	1 - 3 m	single
Fothergilla gardenii	0.5 - 1.2 m	like thickets
Gaultheria procumbens	0.2 - 0.4 m	like nests
Gaultheria shallon	0.5 - 1 m	like thickets, rampant
Hippophae rhamnoides	2 - 8 m	like thickets, rampant
Hydrangea arborescens var.	0.5 - 1 m	like clumps
Hydrangea quercifolia	1 - 1.5 m	single
Hypericum calycinum	0.2 - 1 m	like nests, rampant
Myrica gale	0.5 - 1.2 m	like thickets
Kerria japonica	0.5 - 1 m	like lawns, rampant
Mahonia aquifolium	0.2 - 0.5 m	single
Pachysandra terminalis var.	0.2 - 0.5 m	like nests
Pachysandra terminalis	0.3 - 0.8 m	like thickets
Phyllostachys species/var.	0.5 - 8 m	like clumps and like thickets
Prunus spinosa	2 - 10 m	like thickets
Prunus tenella varieties	0.5 - 1.5 m	like thickets
Pseudosasa japonica	0.5 - 1.5 m	like thickets
Robinia hispida	0.5 - 2 m	like clumps
Rosa blanda	0.5 - 2 m	like thickets
Rosa canina	1 - 2 m	like clumps
Rosa carolina	0.5 - 2 m	like thickets, rampant
Rosa gallica	0.5 - 6 m	like thickets, rampant
Rosa nitida	0.2 - 1 m	like thickets, rampant
Rosa pimpinellifolia	0.1 - 2 m	like thickets, rampant
Rosa rugotida	0.5 - 2 m	like thickets, rampant
Rosa rugosa	0.5 - 2 m	like thickets, rampant
Rubus idaeus	0.2 - 2 m	like clumps
Sambucus canadensis var.	1 - 1.5 m	single
Sasa palmata	0.5 - 1.5 m	like thickets
Sasa veitchii	0.5 - 2 m	like thickets, extremely rampant
Sorbaria sorbifolia	0.2 - 2 m	like thickets, rampant
Symphoricarpos a. laev.	0.2 - 2 m	like thickets
Syringa vulgaris	0.5 - 2 m	like thickets
Ulex europaeus	0.5 - 2 m	like thickets
Vaccinium corymbosum	0.5 - 1 m	like clumps
Vaccinium vitis-idaea var.	0.1 - 0,3 m	like nests
Viburnum farreri	0.5 - 1.5 m	like clumps

3. Climbers

Akebia quinata	0.5 - 2 m	like clumps, rampant
Celastrus orbiculatus	1 - 2 m	like clumps
Lonicera japonica varieties	0.5 - 1 m	like clumps
Lonicera periclymenum	0.5 - 1 m	like clumps





25 Characteristics of the root system of the trees

1. Large trees (Trees 1st order)

Genus/species/variety	Rootsystem type	Lifting of pavement	Tolerates covering	Response to mechanical damage	Penetrating sewage lines
Acer platanoides varieties	shallow/cordate	possible	possible	tolerant	observed
Acer pseudoplatanus varieties	deep	rare	quite tolerant	tolerant	frequent
Acer saccharinum varieties	extremely shallow	strong	quite tolerant	sensitive	preferred
Acer saccharum	shallow	possible	---	tolerant	---
Aesculus hippocastanum	shallow, far	strong	sensitive	sensitive	preferred
Ailanthus altissima	shallow	strong	sensitive	sensitive	frequent
Alnus glutinosa	shallow	rare	possible	tolerant	frequent
Betula maximowicziana	shallow/cordate	strong	sensitive	sensitive	---
Betula papyrifera	shallow	possible	sensitive	sensitive	---
Betula pendula	extremely shallow	strong	not possible	sensitive	rare
Castanea sativa	deep, dense	rare	possible	---	---
Celtis australis	deep	possible	---	sensitive	---
Fagus sylvatica varieties	shallow/cordate	possible	not possible	sensitive	never
Fraxinus excelsior varieties	deep, weit	rare	possible	tolerant	frequent
Gleditsia triacanthos	shallow	rare	possible	tolerant	---
Gymnocladus dioicus	cordate/deep	possible	sensitive	sensitive	---
Juglans cinerea	deep	possible	---	tolerant	---
Juglans nigra	extrem deep	strong	possible	sensitive	rare
Liriodendron tulipifera	shallow, fleischig	possible	sensitive	sensitive	---
Platanus acerifolia	cordate	strong	quite tolerant	tolerant	frequent
Platanus acerifolia varieties	deep	strong	possible	sensitive	frequent





2. Medium-size Trees (Trees 2nd order)

Genus/species/variety	Rootsystem type	Lifting of pavement	Tolerates covering	Response to mechanical damage	Penetrating sewage lines
Acer campestre varieties	cordate	rare	possible	tolerant	rare
Acer freemanii varieties	cordate	possible	---	---	frequent
Acer negundo varieties	shallow	possible	sensitive	sensitive	frequent
Acer platanoides varieties	shallow/cordate	possible	possible	tolerant	observed
Acer rubrum varieties	shallow	possible	sensitive	sensitive	observed
Acer saccharinum 'Wieri'	extremely shallow	strong	quite tolerant	sensitive	preferred
Aesculus flava 'Vestita'	cordate	---	---	sensitive	---
Alnus cordata	shallow	rare	possible	---	---
Alnus incana	shallow	possible	possible	tolerant	preferred
Alnus spaethii	shallow	---	---	---	---
Betula ermanii	shallow	strong	sensitive	sensitive	---
Betula nigra	shallow, dense	possible	sensitive	sensitive	rare
Betula pubescens	shallow/cordate	---	possible	tolerant	---
Betula utilis jacquemontii	shallow	strong	sensitive	sensitive	---
Carpinus betulus varieties	cordate, intense	rare	slight	sensitive	---
Cercidiphyllum japonicum	shallow/cordate	strong	---	---	---
Corylus colurna	cordate	possible	slight	sensitive	---
Davidia involucrata vilmoriniana	shallow	---	not possible	sensitive	---
Euodia hupehensis	cordate	possible	---	---	---
Fagus sylvatica varieties	shallow/cordate	possible	not possible	sensitive	never
Fraxinus angustifolia 'Raywood'	deep	---	slight	tolerant	---
Fraxinus americana varieties	shallow, cordate	rare	slight	tolerant	rare
Fraxinus excelsior varieties	deep, far	rare	possible	tolerant	frequent
Fraxinus pennsylvanica varieties	cordate	rare	slight	tolerant	rare
Juglans regia	deep	rare	possible	sensitive	---
Liquidambar styraciflua	cordate	possible	slight	sensitive	observed





25 Characteristics of the root system of the trees

2. Medium-size Trees (Trees 2nd order)

Genus/species/variety	Rootsystem type	Lifting of pavement	Tolerates covering	Response to mechanical damage	Penetrating sewage lines
Liquidambar styraciflua varieties	cordate	possible	slight	sensitive	observed
Nyssa sylvatica	deep	---	slight	sensitive	---
Paulownia tomentosa	deep	possible	slight	tolerant	---
Phellodendron amurense	shallow, far	strong	slight	---	---
Populus simonii	shallow	strong	possible	tolerant	observed
Populus tremula	shallow	strong	possible	tolerant	preferred
Prunus avium	cordate	possible	slight	sensitive	observed
Pterocarya fraxinifolia	shallow, far	strong	possible	tolerant	preferred
Quercus coccinea	shallow	possible	sensitive	sensitive	observed
Quercus macranthera	deep	rare	possible	---	---
Quercus palustris	shallow	strong	sensitive	sensitive	observed
Quercus palustris varieties	shallow	strong	sensitive	sensitive	observed
Robinia pseudoacacia varieties	shallow	possible	slight	tolerant	never
Salix alba varieties	shallow	strong	quite tolerant	tolerant	preferred
Salix alba 'Tristis'	shallow	strong	slight	tolerant	preferred
Sophora japonica	shallow	strong	slight	sensitive	---
Sorbus aucuparia varieties	shallow/cordate	strong	possible	sensitive	never
Sorbus domestica	deep	strong	slight	---	---
Sorbus intermedia varieties	cordate	possible	possible	tolerant	never
Tilia americana varieties	cordate	possible	sensitive	sensitive	---
Tilia cordata varieties	cordate, intense	strong	slight	tolerant	never
Tilia euchlora	cordate	strong	slight	sensitive	---
Ulmus hybris	cordate	possible	slight	---	---
Zelkova serrata varieties	cordate	---	---	---	---





3. Small trees (Trees 3rd order)

Genus/species/variety	Rootsystem type	Lifting of pavement	Tolerates covering	Response to mechanical damage	Penetrating sewage lines
Rhus glabra	shallow	rare	sensitive	sensitive	---
Rhus typhina	shallow, far	strong	sensitive	sensitive	---
Robinia 'Casque Rouge' u.a.	shallow	rare	sensitive	sensitive	---
Salix species and varieties	shallow	strong	quite tolerant	tolerant	preferred
Sorbus species and varieties	cordate/deep	possible	sensitive	sensitive	possible
Styrax obassia	cordate	---	---	---	---
Sophora japonica	shallow	strong	slight	sensitive	---
Sorbus aucuparia varieties	shallow/cordate	strong	possible	sensitive	never
Sorbus domestica	deep	strong	slight	---	---
Sorbus intermedia varieties	cordate	possible	possible	tolerant	never
Tilia americana varieties	cordate	possible	sensitive	sensitive	---
Tilia cordata varieties	cordate, intense	strong	slight	tolerant	never
Tilia euchlora	cordate	strong	slight	sensitive	---
Ulmus hybrids	cordate	possible	slight	---	---
Zelkova serrata varieties	cordate	---	---	---	---





25 Characteristics of the root system of the trees

4. Conifers

Genus/species/variety	Rootsystem type	Lifting of pavement	Tolerates covering	Response to mechanical damage	Penetrating sewage lines
Abies species and varieties	cordate/deep	possible	possible	sensitive	never
Cedrus species and varieties	cordate/deep	rare	possible	sensitive	never
Chamaecyparis species and varieties	shallow, intense	possible	sensitive	sensitive	never
Cupressocyparis leylandii	cordate	possible	sensitive	---	---
Ginkgo biloba	cordate	rare	sensitive	sensitive	---
Juniperus virginiana varieties	shallow/deep	rare	possible	tolerant	---
Larix species and varieties	cordate/deep	possible	possible	tolerant	---
Metasequoia glyptostroboides	shallow	strong	sensitive	sensitive	possible
Picea species and varieties	shallow	possible	sensitive	sensitive	never
Pinus species and varieties	shallow/deep	strong	possible	tolerant	never
Pseudolarix amabilis	deep	rare	---	---	never
Pseudotsuga menziesii caesia	cordate	rare	slight	---	never
Sciadopitys verticillata	shallow	never	not possible	sensitive	never
Sequoiadendron giganteum	shallow/deep	possible	not possible	sensitive	never
Taxodium distichum	shallow, far	possible	slight	tolerant	possible
Taxus baccata	cordate	possible	slight	---	never
Thuja species and varieties	shallow, dense	possible	slight	sensitive	never
Thujopsis dolabrata	shallow	possible	slight	---	---
Tsuga species and varieties	shallow	possible	sensitive	sensitive	never





26 Thorny and prickly plants

Thorns are pointed, sharp, prickly organs created out of the transformation of leaves or shoots, such as with *Rhamnus catharticus*. On leaves, thorns are formed from needle-like projections on serrated or notched leaf edges, such as with *Mahonia aquifolium*.

Prickles occur on plants as the outgrowths of the outer layer of bark or skin, such as with roses or blackberries. The formation of thorns and prickles is not a constant, but depends on:

- location (*Prunus spinosa* is thornier on dry soil than on fresh)
- age (young specimen of *Ilex aquifolium* are thornier than older ones)
- cutting (more thorns on leaves)

Thorny or prickly trees and shrubs can replace fences. When these plants are pruned they become impenetrable due to their dense branching and the increased amount of thorns. This makes for safe hiding spots for small animals and birds.

Genus/species/variety	Thorns or prickles on		
	Mainstem	Twig	Leaf
1. Deciduous trees			
<i>Aralia elata</i> varieties	+		
<i>Crataegus</i> species and varieties	+	+	
<i>Elaeagnus angustifolia</i>	+	+	
<i>Gleditsia triacanthos</i>	+	+	
<i>Hippophae rhamnoides</i>	+	+	
<i>Ilex aquifolium</i> varieties			+
<i>Malus sylvestris</i>		+	
<i>Pyrus communis</i>	+	+	
<i>Pyrus salicifolia</i>		+	
<i>Pyrus regelii</i>	+	+	
<i>Robinia pseudoacacia</i>	+		
2. Shrubs			
<i>Acanthopanax sieboldianus</i>		+	
<i>Berberis</i> species and varieties		+	+
<i>Chaenomeles</i> species and varieties		+	
<i>Crataegus</i> species and varieties	+	+	
<i>Elaeagnus pungens</i> 'Maculata'		+	
<i>Genista lydia</i>		+	
<i>Hippophae rhamnoides</i>	+	+	
<i>Ilex altaclerensis</i> varieties			+
<i>Ilex aquifolium</i> varieties			+
<i>Ilex meserveae</i> varieties			+
<i>Lycium barbarum</i>		+	
<i>Mahonia</i> species and varieties			+
<i>Mespilus germanica</i>	+	+	
<i>Osmanthus heterophyllus</i>			+
<i>Pernettya mucronata</i>			+
<i>Prunus spinosa</i>	+	+	
<i>Pyracantha</i> species and varieties	+	+	
<i>Rhamnus catharticus</i>		+	

Genus/species/variety	Thorns or prickles on		
	Mainstem	Twig	Leaf
<i>Ribes divaricatum</i>		+	
<i>Rosa</i> species and varieties		+	
<i>Rubus</i> species and varieties		+	
<i>Ulex europaeus</i>	+	+	

3. Climbers

<i>Rosa</i> species and varieties	+		
<i>Rubus</i> species and varieties		+	

4. Conifers

<i>Araucaria araucana</i>		+	+
<i>Cedrus deodara</i> varieties			+
<i>Juniperus chinensis</i> varieties		+	+
<i>Juniperus communis</i> varieties		+	+
<i>Juniperus media</i> varieties			+
<i>Juniperus squamata</i>		+	+
<i>Picea abies</i> varieties			+
<i>Picea pungens</i> varieties			+
<i>Pinus leucodermis</i>			+
<i>Pinus nigra austriaca</i> varieties			+
<i>Pinus sylvestris</i> varieties			+

27 Plants with conspicuous bark colour

Many plants develop bark colours that differ from normal colours. Normally, grey-brown or blackish coloured bark with lengthways fissures is found, occasionally with scaly peelings. The conspicuously coloured stems and twigs are only recognisable if the bark is smooth.

Note: Damage to bark, stem or twigs will provoke a bark development in which the characteristic colour of the smooth bark is irretrievably lost. The bark colour typical of the species disappears with age and is gradually replaced by a dull grey bark.

Tip: Shrubs can be made to form new shoots with generous pruning in spring. The new twigs then display the typical, original bark colour in the following year.

Genus/species/variety	Bark colour	Note
1. Trees		
<i>Acer buergerianum</i>	orange, brown and grey	peeling off in patches
<i>Acer griseum</i>	cinnamon-red	peeling off in patches
<i>Acer davidii</i>	white-green stripes	especially in winter high ornamental value





27 Plants with conspicuous bark colour

Genus/species/variety	Bark colour	Note
1. Trees		
Acer palmatum 'Sangokaku'	bright coral red bark	especially in winter high ornamental value
Acer pensylvanicum	green with white vertical stripes	
Acer rufrinerve	grey-green and white lengthways stripes on stem and twigs	
Betula albosinensis	pink-white to copper-red	
Betula ermanii	white	
Betula maximowicziana	pale white to copper-brown	
Betula nigra	reddish to black-brown	peeling off in patches
Betula papyrifera	white	horizontal stripes
Betula pendula	white	black bark when old
Betula pubescens	white	horizontal stripes
Betula jacquemontii	shimmering white	peeling off like paper
Carpinus japonica	dark green to grey-purple	smooth, little grooved
Malus sylvestris	scaly, reddish, light brown	
Parrotia persica	scaly, white, reddish, green	only at the base of the stem
Phellodendron amurense	light grey with strips of cork	
Platanus acerifolia varieties	scaly light grey to light brown	scaly peeling off in large sections
Platanus orientalis	grey	peeling off in thin sections
Populus simonii	whitish grey	stays smooth a long time
Populus tremula	light silver-grey	stays smooth a long time
Prunus lusitanica varieties	red to red-brown	
Prunus maackii	shiny cinnamon-red	horizontal stripes
Prunus maackii 'Amber Beauty'	shiny golden yellow	horizontal stripes
Prunus serrula	shiny-mahagonired	horizontal stripes
Prunus schmittii	shiny dark brown	horizontal stripes
Prunus serrulata varieties	shiny red-brown	horizontal stripes
Populus alba 'Nivea'	white to light grey	bark pattern when old
Salix acutifolia 'Pendulifolia'	glaucous silver-blue	on 2-4 years twigs, cutting necessary
Salix daphnoides varieties	glaucous silver-blue	on 2-4 years twigs, cutting necessary
Salix alba 'Tristis'	bright yellow to yellow-green	only young twigs
Sorbus decora	bronze	horizontal stripes
Zelkova serrata varieties	grey, with orange	peeling off in patches when old

Genus/species/variety	Bark colour	Note
2. Shrubs		
Bambus species and varieties	green with yellow or black	only thin out
Caryopteris clandonensis i.S.	silvery grey	cut yearly
Cornus alba	brownish red	only on 2-4 year twigs, regular thinning out necessary
Cornus alba 'Elegantissima'	dark red	as above
Cornus alba 'Kesselringii'	black to black-red	as above
Cornus alba 'Sibirica'	bright red	as above
Cornus alba 'Spaethii'	dark red	as above
Cornus sanguinea	dark red	
Cornus sanguinea 'Winter Beauty'	bright yellow-orange-red	pruning encourages the colouring
Cornus stolonifera 'Flaviramea'	yellow	as above
Cornus stolonifera 'Kelsey'	fresh green to reddish	as above
Cytisus scoparius hybrids	darkgreen	as above
Euonymus species	green with cork strips	no pruning only thinning out peeling off in patches
Heptacodium miconioides	brown-yellow to brown-red	
Hydrangea quercifolia	yellowbrown	peeling off in patches
Kerria japonica varieties	freshgreen	
Lonicera caerulea	yellow to orange-brown	peeling off in patches
Lycium barbarum	light grey	
Nothofagus antarctica	shinybrown	horizontal stripes
Perovskia abrotanoides	feltygrey	
Salix balsamifera mas	shiny red-brown to green	
Salix triandra	scaly cinnamon-red	base of stem
Stephanandra incisa 'Crispa'	red-brown	
Stephanandra tanakae	cinnamon-red	thin out
Styrax obassia	orange and grey	peeling off in patches





28 Plants that need light

Plants that need plenty of light are often also pioneer plants, i.e. they are the first to settle on fallow land. The older they get, the less they tolerate any type of shade. They initially try to grow into the light when they are in the shade. But if shade-tolerant, more dominant plants (even large shrubs) come too close for long periods, they lose their leaves and then die. Plants that form runners, such as *Rhus typhina*, try to get out of the shade with increased production of runners. And the following should be kept in mind: the poorer the location, for instance dry soil that is not nutritious, the more light is needed.

Note: All varieties that at least tolerate shade when young or still come to terms with shady areas when old have been left out.

Genus/species/variety	Reaction to shade
1. Deciduous trees	
<i>Acer cappadocicum</i>	crooked stem
<i>Acer freemanii</i>	crooked stem
<i>Acer ginnala</i>	short-lived, crooked habit
<i>Ailanthus altissima</i>	forms runners, crooked stem
<i>Alnus incana</i>	crooked stem
<i>Betula</i> species and varieties	crooked stem
<i>Celtis australis</i>	atypical, broken-up crown
<i>Cercis siliquastrum</i>	crooked stem
<i>Fraxinus americana</i> varieties	crooked stem
<i>Fraxinus ornus</i> varieties	no flowers
<i>Fraxinus pennsylvanica</i> varieties	crooked stem
<i>Gleditsia triacanthos</i> varieties	crooked stem
<i>Hippophae rhamnoides</i>	short-lived, forms runners
<i>Juglans cinerea</i>	crooked stem
<i>Koelreuteria paniculata</i>	extremely crooked habit
<i>Liquidambar styraciflua</i>	atypical, broken-up crown
<i>Morus nigra</i>	atypical, broken-up crown
<i>Nyssa sylvatica</i>	crooked stem, atypical, broken-up crown
<i>Paulownia tomentosa</i>	crooked stem, atypical, broken-up crown
<i>Platanus acerifolia</i>	tolerates light shade
<i>Populus</i> species and varieties	forms runners, short-lived
<i>Prunus</i> species and varieties	atypical, broken-up crown, crooked stem
<i>Pyrus calleryana</i> varieties	sensitive to frost
<i>Pyrus nivalis</i>	short-lived, slow-growing
<i>Pyrus regelii</i>	crooked stem
<i>Pyrus salicifolia</i>	short-lived
<i>Rhus glabra</i>	forms runners, short-lived
<i>Rhus typhina</i>	forms runners, short-lived
<i>Robinia pseudoacacia</i> varieties	crooked stem, short-lived

Genus/species/variety	Reaction to shade
<i>Salix</i> species and varieties	crooked habit, short-lived,
<i>Sophora japonica</i>	crooked stem, sensitive to frost
<i>Tilia euchlora</i>	atypical broken-up crown
<i>Tilia henryana</i>	atypical broken-up crown
<i>Tilia tomentosa</i> varieties	persistent, susceptible to breaking
<i>Ulmus</i> 'Columella'	crooked habit
<i>Ulmus</i> 'Sapporo Autumn Gold'	crooked stem
<i>Ulmus glabra</i> 'Pendula'	less leaves
<i>Zelkova serrata</i>	atypical, broken-up crown

2. Shrubs

<i>Buddleja</i> species and varieties	no flowers
<i>Calluna vulgaris</i> varieties	no flowers, shaggy-unkept
<i>Caryopteris clandonensis</i> varieties	short-lived
<i>Chionanthus virginicus</i>	crooked habit
<i>Cotoneaster sternianus</i>	crooked habit
<i>Cytisus</i> species and varieties	short-lived
<i>Elaeagnus</i> species and varieties	crooked habit
<i>Erica</i> species and varieties	short-lived, loses its compactness
<i>Genista</i> species and varieties	no flowers
<i>Hibiscus syriacus</i> varieties	crooked habit, no flowers
<i>Hippophae rhamnoides</i>	short-lived, forms runners
<i>Hypericum kalmianum</i> varieties	short-lived
<i>Lavandula angustifolia</i> varieties	no flowers, short-lived
<i>Lespedeza thunbergii</i>	no flowers
<i>Perovskia abrotanoides</i>	crooked habit, short-lived
<i>Prunus cistena</i>	leaves turn green, crooked habit
<i>Prunus mahaleb</i>	crooked stem, atypical, broken-up crown
<i>Rhus typhina</i> varieties	crooked habit, forms runners
<i>Ribes sanguineum</i> varieties	crooked habit, short-lived
<i>Rosa glauca</i>	crooked habit, short-lived
<i>Salix</i> species and varieties	crooked habit, short-lived
<i>Syringa hyacinthiflora</i> varieties	no flowers
<i>Syringa prestoniae</i> varieties	crooked habit, no flowers
<i>Tamarix</i> species	crooked habit
<i>Ulex europaeus</i>	crooked habit, forms runners
<i>Vaccinium macrocarpon</i>	short-lived

3. Climbers

<i>Campsis tagliabuana</i>	no flowers
<i>Clematis texensis</i>	no flowers
<i>Jasminum nudiflorum</i>	no flowers
<i>Wisteria</i> species and varieties	few flowers, thinned out





28 Plants that need light

Genus/species/variety	Reaction to shade
4. Conifers	
Abies concolor	turns green
Abies procera 'Glauca'	turns green
Araucaria araucana	
Cedrus species and varieties	loses its leaves
Cupressocyparis leylandii varieties	thinned out or loses its leaves
Ginkgo biloba	extrem crooked habit
Juniperus species and varieties	extremely crooked habit
Larix species and varieties	crooked stem, atypical, broken-up crown
Picea orientalis varieties	thinned out or loses its leaves
Picea glauca varieties	thinned out or loses its leaves
Picea pungens varieties	turns green or thinned out or loses its leaves
Pinus species and varieties	thinned out or loses its leaves
Pseudolarix amabilis	crooked stem, atypical, broken-up crown
Taxodium distichum	atypical, broken-up crown

29 Shade-tolerant plants

Few plants like shade. Most varieties may tolerate semi-shade or even full shade when young, but the older they get, the more light they need. Plants in the shade regenerate insufficiently. Generous pruning does not cause them to create new shoots, but stops shooting altogether in the shade. Full shade does not mean dark shade like in a spruce forest, but only far-reaching protection from sun rays with wandering spots of light during the course of the day. Under the deep-reaching branches of large trees or draped shrubs, no long-term underplanting is possible even with shade-tolerant plants.

Genus/species/variety	Semi-shade	Full shade
1. Deciduous trees		
Acer campestre	+	
Acer platanoides in green-leaf varieties	(+)	
Acer freemanii	+	
Acer griseum	+	
Acer japonicum varieties	+	
Acer pensylvanicum	+	+
Acer rufinerve	+	
Acer neglectum 'Annae'	+	(+)
Carpinus betulus varieties	+	(+)
Cornus species and varieties	+	
Crataegus species and varieties	+	
Fagus sylvatica all green varieties	+	+
Fraxinus americana	+	
Fraxinus pennsylvanica	+	
Ilex aquifolium varieties	+	+

Explanation of symbols: (+) = of limited usefulness

Genus/species/variety	Semi-shade	Full shade
Malus sylvestris	+	
Ostrya carpinifolia	+	+
Prunus padus	+	
Sorbus aucuparia	+	+
Sorbus domestica	+	
Sorbus torminalis	+	+
Stewartia pseudocamellia	+	
Tilia americana varieties	+	
Tilia platyphyllos	+	
Ulmus carpinifolia	+	
Ulmus glabra	+	
2. Shrubs		
Acer palmatum varieties	+	
Aesculus parviflora	+	
Aronia species and varieties	+	
Aucuba japonica varieties	+	
Berberis species and varieties	+	
Buxus sempervirens varieties	+	+
Cornus species and varieties	+	(+)
Corylus avellana	+	
Crataegus species and varieties	+	
Daphne mezereum varieties	+	
Eleaegnus ebbingei	+	
Euonymus species and varieties	+	
Euonymus fortunei varieties	+	+
Fothergilla species	+	+
Gaultheria species and varieties	+	+
Hydrangea species and varieties	+	(+)
Ilex altaclerensis varieties	+	+
Ilex aquifolium varieties	+	+
Ilex meserveae varieties	+	
Kalmia species and varieties	+	
Kerria japonica	+	+
Leucothoe walteri	+	+
Ligustrum species and varieties	+	(+)
Lonicera species and varieties	+	+
Magnolia stellata varieties	(+)	
Mahonia species and varieties	+	+
Mespilus germanica	+	
Osmanthus heterophyllus	+	+
Pachysandra terminalis	+	+
Philadelphus species and varieties	+	
Photinia villosa	+	
Pieris species and varieties	+	+
Prunus laurocerasus varieties	+	+
Prunus lusitanica	+	+
Prunus padus	+	
Ptelea trifoliata	+	+





Genus/species/variety	Semi-shade	Full shade
Rhamnus species and varieties	+	+
Rhododendron species and varieties	+	
Rhodotypos scandens	+	+
Ribes alpinum varieties	+	+
Ribes aureum	+	
Ribes divaricatum	+	
Rosa arvensis	+	
Rosa multiflora	+	
Rubus species and varieties	+	+
Sambucus species and varieties	+	
Skimmia japonica varieties	+	+
Sorbus species and varieties	+	
Sorbaria sorbifolia	+	+
Spiraea species and varieties	+	
Staphylea colchica	+	
Stranvaesia davidiana	+	
Stephanandra species and varieties	+	
Stewartia pseudocamellia	+	
Vaccinium corymbosum	+	
Vaccinium vitis-idaea varieties	+	+
Viburnum species and varieties	+	
Viburnum tinus	+	+
Vinca species and varieties	+	+
Weigela species and varieties	+	
3. Climbers		
Actinidia species and varieties	+	
Akebia quinata	+	
Aristolochia macrophylla	+	+
Celastrus orbiculatus	+	+
Clematis alpina	+	
Clematis tangutica	+	
Clematis vitalba	+	+
Clematis viticella	+	
Euonymus fortunei varieties	+	+
Hedera colchica varieties	+	+
Hedera helix varieties	+	+
Hydrangea petiolaris	+	
Lonicera species and varieties	+	
Parthenocissus species and varieties	+	+
Polygonum aubertii	+	
Rosa arvensis	+	
Rubus caesius	+	+
Rubus fruticosus	+	+
Rubus henryi	+	+

Genus/species/variety	Semi-shade	Full shade
4. Conifers		
Abies species and varieties (Youth state)	+	+
Chamaecyparis species and varieties	+	
Picea species and varieties (Youth state)	+	
Sciadopitys verticillata	+	+
Sequoia sempervirens	+	+
Sequoiadendron giganteum	+	
Taxus species and varieties	+	+
Thuja species and varieties	+	+
Thujopsis dolabrata	+	+
Tsuga species and varieties	+	+

30 Wind resistant plants

The wind-resistance of plants is not a constant, but depends on exposure, age and soil substrate, with the exposure playing a decisive role. Not every species is capable of growing in extreme, usually westward-oriented areas. Some only survive when other plants surround them or when they are grown on the side of the bed facing away from the wind where shoots, leaves and flowers do not dry out. These reactions are listed in the table along with the varieties that are suitable for all exposed areas – taking into consideration their other needs such as light needs. For most species, the elasticity of the branches and twigs noticeably decreases with age, which may mean that species that have great wind-resistance in the first 30 years eventually lose their elasticity and become extremely susceptible to breaking. When this happens, cutting back to further regeneration may be necessary, or the plant may need to be replaced.

On heavy soil or when the water level is high, many species have a very shallow root system and are not really anchored in the soil so that they lose their stability as they grow. Here, the remedy is the correct selection of species and occasional pruning.

Note: In situations with permanent strong winds or vacuums or at outlets for outgoing warm air, no plant can survive.

See table next page

Explanation of symbols: (+) = of limited usefulness





30 Wind resistant plants

Genus/species/variety	Extreme areas	All exposures	Genus/species/variety	Extreme areas	All exposures
1. Indigenous species			2. Indigenous Conifers		
Acer campestre	+	+	Abies alba		+
Acer platanoides		+	Juniperus communis varieties		+
Acer pseudoplatanus	+	+	Larix decidua	+	+
Alnus glutinosa		+	Pinus cembra	+	+
Alnus incana	+	+	Pinus mugo	+	+
Amelanchier ovalis	+	+	Pinus sylvestris		+
Berberis vulgaris		+	Taxus baccata		+
Betula pubescens	+		3. Park trees and decorative shrubs		
Carpinus betulus	+	+	Acer freemanii		+
Castanea sativa		+	Acer monspessulanum		+
Clematis vitalba		+	Alnus cordata	+	+
Colutea arborescens		+	Alnus spaethii		+
Cornus mas		+	Amelanchier species and varieties	+	+
Cornus sanguinea	+	+	Aronia species and varieties		+
Crataegus laevigata		+	Bambus species and varieties		+
Crataegus monogyna	+	+	Betula species and varieties		+
Euonymus europaeus		+	Caragana arborescens	+	
Fagus sylvatica	+	+	Corylus columna		+
Fraxinus excelsior		+	Cotoneaster (summergreen)		+
Hippophae rhamnoides	+		Crataegus species and varieties		+
Ilex aquifolium		+	Elaeagnus species and varieties	+	
Juglans regia varieties		+	Forsythia species and varieties		+
Ligustrum vulgare		+	Fraxinus americana		+
Malus sylvestris		+	Fraxinus ornus varieties		+
Myrica gale	+		Fraxinus pennsylvanica		+
Populus alba		+	Juglans nigra	+	+
Populus nigra varieties		+	Kolkwitzia amabilis		+
Populus tremula	+	+	Ligustrum species and varieties		+
Prunus mahaleb		+	Lonicera korolkowii zabelii		+
Prunus spinosa	+	+	Lonicera ledebourii		+
Pyrus communis		+	Lycium barbarum	+	
Quercus petraea		+	Philadelphus species and varieties		+
Quercus robur		+	Photinia villosa		+
Rhamnus species		+	Physocarpus opulifolius		+
Rosa canina	+		Platanus acerifolia		+
Rosa glauca	+		Ptelea trifoliata		+
Rosa pimpinellifolia	+		Pyracantha species and varieties		+
Rosa rubiginosa	+		Pyrus calleryana varieties		+
Salix species and varieties		+	Pyrus salcifolia		+
Sambucus species and varieties		+	Quercus cerris	+	+
Sorbus species and varieties		+	Quercus species and varieties		+
Ulex europaeus	+	+	Ribes divaricatum	+	+
Ulmus species and varieties		+	Sorbaria sorbifolia		+
Viburnum species and varieties	+		Sorbus americana		+
			Sorbus species and varieties		+
			Spiraea species and varieties		+
			Syringa vulgaris	+	
			Zelkova serrata		+





Genus/species/variety	Extreme areas	All exposures
4. Climbers		
Actinidia arguta		+
Celastrus orbiculatus		+
Clematis tangutica		+
Hedera helix		+
Hydrangea petiolaris		+
Parthenocissus quinquefolia		+
5. Conifers		
Abies species and varieties		+
Araucaria araucana	+	+
Cedrus species and varieties		+
Chamaecyparis species and varieties		+
Cupressocyparis leylandii varieties	+	+
Ginkgo biloba		+
Juniperus species and varieties		+
Larix kaempferi	+	+
Metasequoia glyptostroboides		+
Microbiota decussata		+
Picea sitchensis	+	+
Pinus species and varieties		+
Sequoia sempervirens	+	+
Sequoiadendron giganteum	+	+
Taxus species and varieties		+
Thuja species and varieties		+
Thujopsis dolabrata		+
Tsuga species and varieties		+

31 Plants for damp and flooded soil

Although many plants can grow in moist to damp soil, most prefer less damp areas. Too much moisture means insufficient oxygen for the roots of the plants. In such areas, most plants have extremely shallow roots. Floods are not tolerated equally well in all seasons. Trees with full foliage are extraordinarily sensitive to long floods in summer. Excess moisture and week-long floods are best tolerated from late winter into spring.

Genus/species/variety	Tolerates dampness	Floods	
		short	long
1. Deciduous trees			
Acer campestre	-	+	-
Acer negundo	+	+	+
Acer platanoides varieties	-	+	-
Acer pseudoplatanus varieties	+	+	-
Acer rubrum	+	+	+
Acer saccharinum varieties	+	+	+
Aesculus flava varieties	+	+	-
Aesculus hippocastanum	-	+	-
Alnus species and varieties	+	+	+
Aralia elata varieties	+	+	-
Betula nigra	+	+	-
Betula pubescens	+	+	-
Carpinus betulus	-	+	-
Catalpa bignonioides	+	+	-
Cercidiphyllum japonicum	-	+	-
Corylus colurna	+	+	-
Fraxinus excelsior varieties	+	+	-
Gleditsia triacanthos varieties	+	+	-
Gymnocladus dioica	+	+	-
Juglans regia	+	+	-
Liquidambar styraciflua	+	+	+
Liriodendron tulipifera	+	+	-
Magnolia kobus	-	+	-
Malus sylvestris	-	+	-
Nyssa sylvatica	+	+	-
Platanus acerifolia	+	+	+
Populus species and varieties	+	+	+
Prunus padus	+	+	+
Pterocarya fraxinifolia	+	+	+
Quercus palustris	+	+	-
Quercus robur	-	+	-
Salix species and varieties	+	+	+
Sorbus decora	+	+	-
Tilia cordata	-	+	-
Ulmus species and varieties	-	+	-
2. Shrubs			
Aesculus parviflora	-	+	-
Amelanchier species and varieties	+	+	-
Aronia species and varieties	+	+	+
Betula nana	+	+	-
Calycanthus floridus	+	+	-
Chionanthus virginicus	+	+	-
Clethra alnifolia	+	+	+
Cornus alba varieties	+	+	-
Cornus florida	+	+	-
Cornus sanguinea	-	+	-
Cornus stolonifera varieties	+	+	+





31 Plants for damp and flooded soil

Genus/species/variety	Tolerates dampness	Floods	
		short	long
2. Shrubs			
Elaeagnus commutata	-	+	-
Erica tetralix	+	-	-
Euonymus europaeus	+	+	-
Euonymus yedoensis varieties	+	+	-
Fothergilla gardenii	+	-	-
Fothergilla major	-	+	-
Gaultheria shallon	+	+	+
Hippophae rhamnoides	+	+	-
Holodiscus discolor ariifolius	+	+	-
Hydrangea species and varieties	+	+	-
Ilex verticillata	+	+	+
Kalmia species and varieties	+	+	-
Ledum palustre	+	+	+
Leucothoe walteri	+	+	-
Lonicera caerulea	+	+	-
Lonicera ledebourii	+	+	-
Magnolia stellata	+	+	-
Myrica gale	+	+	-
Parrotia persica	+	+	-
Pernettya mucronata varieties	+	+	-
Prunus padus	+	+	+
Rhamnus frangula	+	+	+
Azalea hybrids	+	+	-
Rubus caesius	+	+	+
Rubus fruticosus	+	+	-
Rosa arvensis	+	+	-
Salix species and varieties	+	+	+
Sambucus nigra	+	+	-
Sorbaria sorbifolia	+	+	-
Stephanandra incisa 'Crispa'	+	+	-
Symphoricarpos albus laevigatus	+	+	-
Vaccinium corymbosum	+	+	+
Viburnum opulus varieties	+	+	+
3. Climbers			
Actinidia arguta	-	+	-
Akebia quinata	+	+	-
Aristolochia macrophylla	+	+	+
Celastrus orbiculatus	+	+	-
Clematis vitalba	+	+	+
Clematis viticella	-	+	-
Euonymus fortunei varieties	+	+	-
Hedera species and varieties	+	+	-
Lonicera species and varieties	-	+	-
Parthenocissus quinquefolia	+	+	+
Polygonum aubertii	+	+	-
Wisteria sinensis	+	+	+

Genus/species/variety	Tolerates dampness	Floods	
		short	long
4. Conifers			
Juniperus horizontalis varieties	+	-	-
Metasequoia glyptostroboides	+	+	-
Picea sitchensis	+	+	-
Pinus monticola varieties	+	-	-
Pinus sylvestris varieties	+	-	-
Pinus strobus	+	-	-
Pinus wallichiana	+	-	-
Taxodium distichum	+	+	+
Thuja occidentalis varieties	+	+	-
Thuja plicata	+	+	-
Thuja standishii	+	-	-

32 Plants that withstand drought

Most of the plants listed cannot be considered drought lovers; rather, they tolerate droughts. Many of them primarily like light and only move into dry areas because more aggressive plants do not follow them there.

The planting phase is critical as the plants have to be watered regularly to grow normally. After planting, they need to be watered regularly in the first few years—more often in dry periods. Stress due to drought means, for most plants, that their growth and foliage are reduced, their autumn colours appear earlier, their frost hardiness is reduced, and the plants are more sensitive to pollution. The plants may also have more insects or mites, which would lead to more difficulties in extreme situations.

Note: The plants that are more sensitive after planting or when young have been noted.

Genus/species/variety	Response to drought
1. Deciduous trees	
Acer buergerianum	resistant
Acer campestre varieties	resistant
Acer cappadoicum	resistant
Acer ginnala	resistant
Acer monspessulanum	resistant
Acer negundo	only as shrub
Acer rubrum	resistant
Acer saccharum 'Legacy'	resistant
Acer tataricum	resistant
Alnus cordata	sensitive when young
Alnus incana	sensitive when young
Alnus spaethii	resistant
Amelanchier arborea	resistant
Betula jacquemontii	resistant





Genus/species/variety	Response to drought	Genus/species/variety	Response to drought
Betula nigra	sensitive when young	2. Shrubs	
Castanea sativa	grows poorly	Acanthopanax sieboldianus	grows poorly
Carpinus betulus	resistant	Amelanchier ovalis	leaves fall early
Celtis australis	resistant	Berberis ottawensis 'Superba'	
Corylus colurna	grows poorly	Berberis thunbergii varieties	thinned out
Crataegus species and varieties	tree-grid must remain open	Berberis vulgaris	very resistant
Fraxinus ornus	resistant	Buddleja species and varieties	flowers wither faster
Fraxinus pennsylvanica varieties	resistant	Caragana arborescens	
Gleditsia triacanthos varieties	not very susceptible to breaking	Cercis siliquastrum	more resistant when mature
Koelreuteria paniculata	resistant	Colutea arborescens	Cornus mas
Liquidamber styraciflua	resistant	Cornus sanguinea	
Magnolia kobus	resistant	Cotinus coggygia varieties	more resistant when mature
Malus tschonoskii	sensitive when young	Cotoneaster dielsianus	sensitive when young
Morus alba	very resistant	Cotoneaster divaricatus	sensitive when young
Morus nigra	sensitive when young	Cotoneaster franchetii	sensitive when young
Nyssa sylvatica	resistant	Cotoneaster sternianus	grows poorly
Ostrya carpinifolia	resistant	Crataegus species and varieties	
Parrotia persica	resistant	Cytisus species and varieties	
Paulownia tomentosa	very resistant	Elaeagnus species and varieties	very resistant
Populus species and varieties	only as shrub, short-lived	Genista species and varieties	
Prunus fruticosa 'Globosa'	sensitive when young	Hippophae rhamnoides	needs residue moisture
Pyrus nivalis	resistant	Ilex 'Nellie R. Stevens'	resistant
Pyrus species and varieties	more resistant when mature	Kolkwitzia amabilis	resistant
Pyrus salicifolia	more resistant when mature	Lespedeza thunbergii	more resistant when mature
Quercus cerris	crooked stem, only as shrub	Ligustrum species and varieties	sensitive during planting
Quercus frainetto	sensitive when young	Lycium barbarum	
Quercus macranthera	resistant	Mespilus germanica	more resistant when mature
Quercus palustris	resistant	Osmanthus heterophyllus	grows poorly
Quercus petraea	crooked stem, only as shrub	Perovskia species and varieties	stands on its own better
Quercus pubescens	high drought tolerance	Physocarpus opulifolius	sensitive when young
Quercus turneri 'Pseudoturneri'	bushy	Prunus mahaleb	very resistant
Rhus species and varieties	more runners	Prunus spinosa	twigs have more thorns
Robinia species and varieties	resistant	Prunus lusitanica varieties	resistant
Sophora japonica varieties	more resistant when mature	Pyracantha hybrids	twigs have more thorns
Sorbus aria varieties	sensitive when young	Rhamnus catharticus	like thickets
Sorbus domestica	grows poorly	Rhus species and varieties	more runners
Sorbus thuringiaca 'Fastigiata'	sensitive when young	Robinia species and varieties	very resistant
Sorbus torminalis	grows poorly	Rosa carolina	grows poorly
Tilia platyphyllos varieties	resistant	Rosa gallica	forms runners
Tilia tomentosa	sensitive when young	Rosa glauca	very resistant
Ulmus holandica varieties	resistant	Rosa pimpinellifolia	loses its foliage bearly
Zelkova serrata varieties	resistant	Rosa rubiginosa	grows poorly
		Rosa rugosa	very resistant
		Rosa rugotida	very resistant
		Salix repens argentea	needs residue moisture
		Spiraea decumbens	
		Syringa vulgaris	
		Tamarix species and varieties	very resistant
		Ulex europaeus	
		Viburnum lantana	





32 Plants that withstand drought

Genus/species/variety

Response to drought

3. Climbers

Campsis radicans	grows poorly
Campsis tagliabuana	resistant
Celastrus orbiculatus	slow-growing
Clematis maximowicziana	sensitive when young
Clematis vitalba	slow-growing
Euonymus fortunei varieties	hardly climbs
Hedera species and varieties	sensitive to frost
Jasminum nudiflorum	
Parthenocissus quinquefolia	thinned out, sensitive when young

4. Conifers

Abies concolor	sensitive when young
Cedrus species and varieties	sensitive when young
Cupressocyparis leylandii	grows poorly, thinned out
Ginkgo biloba	grows poorly
Juniperus species and varieties	very resistant
Picea orientalis	sensitive when young
Picea pungens varieties	
Pinus contorta	squat
Pinus densiflora 'Umbraculifera'	
Pinus jeffreyi	grows poorly
Pinus leucodermis	very resistant
Pinus mugo varieties	sensitive when young
Pinus nigra varieties	sensitive during planting
Pinus peuce	sensitive during planting
Pinus ponderosa	sensitive during planting
Pinus sylvestris varieties	
Pseudotsuga menziesii caesia	grows poorly

33 Plants for alkaline soil

Many of the plants named occur on even neutral or slightly acidic soil in the wild without any noticeable problems. Soil humidity, structure and nutrition play important roles in addition to the soil pH. Numerous exotic species do not bind to chalk or alkaline soil in their native habitat, but rather respond with indifference. In contrast, in central Europe they prefer chalky soil where they can withstand more drought, are less damaged by frost, and can compete with strong-growing competition better. In conclusion, it is a complex matter that cannot be stated in general terms for every species.

1. Deciduous trees

Acer campestre varieties
 Acer cappadocicum varieties
 Acer freemanii varieties
 Acer monspessulanum
 Acer platanoides varieties
 Acer pseudoplatanus varieties
 Acer neglectum 'Annae'
 Alnus incana
 Alnus spaethii
 Celtis australis
 Corylus colurna
 Crataegus species and varieties
 Elaeagnus angustifolia
 Euodia hupehensis
 Fraxinus species and varieties
 Gleditsia triacanthos varieties
 Gymnocladus dioica
 Juglans nigra
 Juglans regia
 Koelreuteria paniculata
 Laburnum species and varieties
 Malus species and varieties
 Morus species and varieties
 Ostrya carpinifolia
 Paulownia tomentosa
 Phellodendron amurense
 Platanus acerifolia varieties
 Platanus orientalis
 Populus alba 'Nivea'
 Populus canescens
 Populus nigra varieties
 Prunus species and varieties
 Pyrus species and varieties
 Quercus species and varieties
 Rhamnus catharticus
 Rhus typhina
 Robinia species and varieties
 Salix alba varieties
 Salix daphnoides varieties
 Sophora japonica varieties
 Sorbus aria varieties
 Sorbus domestica
 Sorbus intermedia varieties
 Sorbus thuringiaca 'Fastigiata'
 Sorbus torminalis
 Tilia species and varieties
 Ulmus species and varieties
 Zelkova serrata varieties

2. Shrubs

Acanthopanax sieboldianum
 Amelanchier ovalis
 Berberis species and varieties
 Buddleja species and varieties
 Buxus sempervirens varieties
 Caragana arborescens
 Caryopteris species and varieties
 Ceanothus deli. 'Gloire de Versailles'
 Cercis siliquastrum
 Chionanthus virginicus
 Colutea arborescens varieties
 Cornus mas
 Cornus sanguinea
 Corylus species and varieties
 Cotinus coggygria varieties
 Cotoneaster species and varieties
 Crataegus species and varieties
 Cytisus beanii
 Cytisus decumbens
 Cytisus kewensis
 Cytisus nigricans varieties
 Cytisus purpureus
 Daphne species and varieties
 Elaeagnus species and varieties
 Erica carnea varieties
 Euonymus europaeus
 Euonymus planipes
 Forsythia species and varieties
 Genista radiata
 Hibiscus syriacus varieties
 Hippophae rhamnoides
 Hypericum kalmianum 'Gemo'
 Laburnum species and varieties
 Lavandula angustifolia varieties
 Ligustrum species and varieties
 Lonicera japonica repens
 Lonicera korolkowii zabelii
 Lonicera xylosteum varieties
 Lycium barbarum
 Malus species and varieties
 Mespilus germanica
 Osmanthus heterophyllus
 Perovskia abrotanoides
 Philadelphus species and varieties
 Prunus species and varieties
 Ptelea trifoliata
 Pyracantha hybrids
 Rhamnus catharticus
 Rhodotypos scandens
 Rhus species and varieties





Robinia hispida varieties
 Rosa arvensis
 Rosa canina varieties
 Rosa gallica
 Rosa glauca
 Rosa moyesii
 Rosa multibracteata
 Rosa pimpinellifolia
 Rosa rubiginosa
 Rubus calycioides
 Rubus idaeus
 Salix elaeagnos
 Salix hastata 'Wehrhahnii'
 Salix purpurea varieties
 Salix repens argentea
 Salix viminalis
 Sambucus canadensis + nigra var.
 Sorbaria sorbifolia
 Spiraea bumalda varieties
 Spiraea decumbens
 Spiraea japonica varieties
 Spiraea nipponica
 Spiraea vanhouttei
 Staphylea colchica
 Syringa species and varieties
 Tamarix species and varieties
 Viburnum bodnantense 'Dawn'
 Viburnum burkwoodii
 Viburnum carlcephalum
 Viburnum farreri
 Viburnum lantana
 Viburnum opulus
 Viburnum rhytidophyllum
 Viburnum tinus
 Vinca species and varieties

34 Plants for acidic soil

The degree of acidity of the soil depends, among other things, on the original rock type. Acidic soil can be of purely mineral (acidic sand or loam) or organic origin. The degree of acidity is stated as its pH value, with the range for acid-loving plants between pH 4 and pH 6.5. Between pH 6.5 and approx. pH 7.2, one speaks of neutral soil; above that, of alkaline. The pH value on its own does not tell us everything; a slightly acidic soil of pH 6, where air humidity is high and humus is present, is better for plants than a soil of pH 6 would be in a situation where the plants are exposed to heat and drought on non-nutritious sand or gravel.

Note: Many of the species named thrive well in neutral soil, some of them even in slightly alkaline soil (see the individual descriptions).

3. Climbers

Actinidia arguta
 Aristolochia macrophylla
 Campsis radicans varieties
 Clematis species and varieties
 Euonyms fortunei varieties
 Hedera species and varieties
 Jasminum nudiflorum
 Lonicera species and varieties
 Parthenocissus quinquefolia varieties
 Polygonum aubertii
 Rosa - Climbers

4. Conifers

Abies concolor
 Cedrus atlantica varieties
 Cedrus libani
 Chamaecyparis nootkatensis var.
 Ginkgo biloba
 Juniperus chinensis varieties
 Juniperus communis varieties
 Juniperus media varieties
 Juniperus sabina varieties
 Juniperus squamata varieties
 Juniperus virginiana varieties
 Larix decidua
 Microbiota decussata
 Picea orientalis varieties
 Picea pungens varieties
 Pinus aristata
 Pinus leucodermis
 Pinus mugo varieties
 Pinus nigra austriaca varieties
 Taxus species and varieties
 Thuja occidentalis varieties

1. Deciduous trees

Acer freemanii varieties
 Acer griseum
 Acer japonicum varieties
 Acer negundo varieties
 Acer pensylvanicum
 Acer rubrum
 Acer rufernerv
 Acer saccharum
 Acer saccharinum varieties
 Ailanthus altissima
 Alnus glutinosa
 Amelanchier species and varieties
 Betula species and varieties
 Castanea sativa
 Cornus alternifolia
 Cornus controversa
 Cornus florida und Formen
 Cornus kousa/C. kousa chinensis var.
 Fraxinus americana varieties
 Fraxinus pennsylvanica varieties
 Ilex aquifolium
 Liquidambar styraciflua
 Liriodendron tulipifera varieties
 Magnolia grandiflora 'Blanchard'
 Magnolia species and varieties
 Nyssa sylvatica
 Parrotia persica
 Populus tremula
 Quercus coccinea
 Quercus palustris
 Quercus rubra
 Salix fragilis
 Sorbus aucuparia varieties
 Sorbus americana
 Sorbus arnoldiana varieties
 Sorbus decora
 Sorbus koehneana
 Stewartia pseudocamellia
 Styrax japonicus
 Styrax obassia

2. Shrubs

Acer japonicum varieties
 Acer palmatum varieties
 Arctostaphylos uva-ursi
 Aronia species and varieties
 Amelanchier species and varieties
 Berberis thunbergii species and varieties
 Betula nana
 Callicarpa bodinieri 'Profusion'
 Calluna vulgaris varieties

Chaenomeles species and varieties
 Clethra alnifolia
 Cornus alternifolia
 Cornus canadensis
 Cornus controversa
 Cornus florida varieties
 Cornus kousa varieties
 Cornus nuttallii
 Corylopsis species and varieties
 Cytisus hybrids
 Cytisus scoparius
 Daboecia species and varieties
 Empetrum nigrum
 Enkianthus campanulatus
 Erica cinerea varieties
 Erica tetralix varieties
 Erica vagans varieties
 Escallonia species and varieties
 Fothergilla species and varieties
 Gaultheria species
 Genista species and varieties
 Halesia carolina
 Hamamelis species and varieties
 Hebe ochracea
 Hydrangea species and varieties
 Ilex species and varieties
 Kalmia angustifolia 'Rubra'
 Ledum palustre
 Lespedeza thunbergii
 Leucothoe walteri
 Lonicera caerulea
 Lonicera ledebourii
 Magnolia species and varieties
 Myrica gale
 Parrotia persica
 Pernettya mucronata varieties
 Photinia villosa
 Pieris species and varieties
 Potentilla fruticosa varieties
 Rhamnus frangula
 Rhododendron species and varieties
 Rosa blanda
 Rosa carolina
 Rosa multiflora
 Rosa rugotida
 Rosa rugosa varieties
 Rubus calycioides
 Rubus fruticosus
 Salix aurita
 Salix balsamifera mas
 Salix cinerea
 Salix helvetica





34 Plants for acidic soil

2. Shrubs

Salix lanata
 Salix repens argentea
 Salix sachalinensis 'Sekka'
 Salix triandra
 Sambucus racemosa
 Skimmia japonica varieties
 Spiraea betulifolia varieties
 Spiraea prunifolia
 Spiraea thunbergii
 Stephanandra incisa 'Crispa'
 Syringa patula varieties
 Ulex europaeus
 Vaccinium species and varieties

3. Climbers

Hydrangea petiolaris
 Lonicera periclymenum
 Rosa multiflora
 Rubus fruticosus
 Wisteria species and varieties

4. Conifers

Abies balsamea 'Nana'
 Abies homolepis
 Abies koreana
 Abies procera 'Glauca'
 Abies veitchii
 Araucaria araucana
 Cedrus deodara varieties

Chamaecyparis lawsoniana varieties
 Chamaecyparis pisifera varieties
 Chamaecyparis obtusa varieties
 Cryptomeria japonica varieties
 Cupressocyparis leylandii varieties
 Juniperus species and varieties
 Picea breweriana
 Picea glauca varieties
 Picea sitchensis
 Pinus banksiana
 Pinus contorta varieties
 Pinus jeffreyi
 Pinus monticola varieties
 Pinus mugo
 Pinus ponderosa
 Pinus pumila varieties
 Pinus schwerinii
 Pinus strobus varieties
 Pinus wallichiana varieties
 Pseudolarix amabilis
 Sciadopitys verticillata
 Sequoia sempervirens
 Sequoiadendron giganteum varieties
 Taxodium distichum
 Thuja occidentalis varieties
 Thuja plicata varieties
 Thuja standishii
 Thujopsis dolabrata
 Tsuga canadensis varieties
 Tsuga diversifolia

1. Deciduous trees

Acer campestre
 Acer ginnala
 Acer negundo varieties
 Acer platanoides varieties
 Acer rubrum varieties
 Acer saccharinum varieties
 Acer neglectum 'Annae'
 Ailanthus altissima
 Alnus cordata
 Alnus incana
 Amelanchier species
 Betula species and varieties
 Castanea sativa
 Cornus kousa
 Elaeagnus angustifolia
 Fraxinus ornus
 Gleditsia triacanthos varieties
 Hippophae rhamnoides
 Koelreuteria paniculata
 Populus species and varieties
 Prunus mahaleb
 Prunus serotina
 Pyrus salicifolia
 Quercus cerris
 Quercus coccinea
 Quercus petraea
 Quercus rubra
 Rhamnus catharticus
 Rhus typhina
 Robinia pseudoacacia varieties
 Salix species and varieties
 Sophora japonica
 Sorbus aucuparia
 Sorbus intermedia

2. Shrubs

Acer freemanii varieties
 Acer ginnala
 Acer monspessulanum
 Acer tataricum
 Amelanchier species
 Arctostaphylos uva-ursi
 Berberis ottawensis 'Superba'
 Berberis thunbergii varieties
 Buddleja alternifolia
 Calluna vulgaris varieties
 Caragana arborescens
 Ceanothus delilianus 'Gloire de Versailles'
 Chaenomeles speciosa
 Colutea arborescens
 Cornus kousa
 Cornus mas

Cornus sanguinea
 Cornus stolonifera 'Flaviramea'
 Cotinus coggygria varieties
 Cotoneaster dielsianus
 Cytisus species and varieties
 Elaeagnus species and varieties
 Erica cinerea
 Genista species and varieties
 Hippophae rhamnoides
 Hypericum calycinum
 Hypericum kalmianum 'Gemo'
 Lespedeza thunbergii
 Ligustrum species and varieties
 Lycium barbarum
 Perovskia abrotanoides
 Physocarpus opulifolius
 Potentilla fruticosa varieties
 Prunus mahaleb
 Prunus serotina
 Rhamnus catharticus
 Rhamnus frangula
 Rhus species and varieties
 Ribes aureum
 Ribes divaricatum
 Rosa glauca
 Rosa multiflora
 Rosa nitida
 Rosa pimpinellifolia
 Rosa rugotida
 Rosa rugosa
 Rubus calycinoides
 Salix species and varieties
 Symphoricarpos species and varieties
 Tamarix species and varieties
 Vaccinium vitis-idaea varieties
 Viburnum lantana

3. Climbers

Actinidia arguta
 Akebia quinata
 Aristolochia macrophylla
 Celastrus orbiculatus
 Jasminum nudiflorum
 Parthenocissus quinquefolia varieties
 Polygonum aubertii
 Wisteria sinensis

4. Conifers

Abies concolor
 Juniperus species and varieties
 Larix kaempferi
 Picea sitchensis
 Pinus species and varieties

35 Plants for light, sandy soil

Few plants grow willingly on sandy soil. Those that do are forced into the sand by stronger competitors. If these competitors are absent, most of the plants named are quite able to thrive on normal soil. Almost all of the plants listed grow better if the sandy soil is somewhat fresh or even moist, contains loamy or humic components, and is not too lacking in nutrients. Just because the plants concerned settle on sandy soil does not mean they prefer a lack of nutrients or drought. It should also be kept in mind that sandy soil does not necessarily mean the soil is acidic, for the pH values may be far into the alkaline range.

Plants that have to make do with sandy soil differ from their relatives on better substrates in, among other things, their multiple stems, crooked growth, more plentiful runners, and shorter-lived leaves. Species susceptible to frost or breaking are at an advantage, however, on sandy soil; they are more prone to damage on loam or clay.





36 Plants for heavy, loamy soil or clay

Heavy loam, loess, or even clay are not optimal soil substrates for most plants. Plant habits are much smaller than on normal loam. Some trees and shrubs, such as *Chaenomeles*, react to this poorly aerated soil with chlorosis (yellowing of the leaves), with sensitivity to fungi (such as *Juniperus*), or with early leaf loss (such as with many *Sorbus* varieties). Other examples of sensitivity would be the extreme frost damage to *Cotoneaster* or the weakened habit of *Picea abies*. Soil improvements and loosening are therefore desirable to prevent or reduce such damage.

Note: The list does not include any plants occasionally considered tolerant of clay but that displayed severe defects in the course of decades of observation in the test garden at Weißenstephan near Munich (heavy loess).

1. Deciduous trees

Acer negundo varieties
Acer platanoides varieties
Acer saccharinum varieties
Aesculus species and varieties
Alnus species and varieties
Aralia elata varieties
Betula nigra
Carpinus betulus varieties
Crataegus species and varieties
Fagus sylvatica varieties
Fraxinus americana microcarpa
Fraxinus americana varieties
Fraxinus excelsior varieties
Fraxinus pennsylvanica
Gymnocladus dioica
Ilex aquifolium varieties
Juglans nigra
Laburnum species and varieties
Liquidambar styraciflua
Lonicera maackii
Magnolia kobus
Populus species and varieties
Prunus avium
Prunus padus varieties
Prunus serrulata varieties
Pterocarya fraxinifolia
Quercus palustris
Quercus robur
Rhamnus catharticus
Salix species and varieties
Tilia species and varieties
Zelkova serrata varieties

2. Shrubs

Aralia elata
Bambus species and varieties
Colutea arborescens
Cornus alba varieties
Cornus mas
Cornus sanguinea
Cornus stolonifera 'Flaviramea'
Corylus avellana
Corylus maxima 'Purpurea'
Cotoneaster species and varieties
Crataegus species and varieties
Deutzia species and varieties
Euonymus europaeus
Euonymus fortunei varieties
Euonymus planipes
Forsythia intermedia varieties
Hamamelis species and varieties
Hypericum calycinum
Ilex aquifolium varieties
Kerria japonica varieties
Laburnum species and varieties
Ligustrum vulgare varieties
Lonicera ledebourii
Lonicera maackii
Lonicera xylosteum
Mahonia aquifolium varieties
Philadelphus species and varieties
Physocarpus opulifolius
Potentilla species and varieties
Prunus spinosa
Pseudosasa japonica
Rhamnus species
Ribes species and varieties
Rosa arvensis
Rosa canina

Rosa multibracteata
Rosa rubiginosa
Rubus caesius
Rubus fruticosus
Rubus idaeus
Salix species and varieties
Sambucus species and varieties
Sorbaria sorbifolia
Spiraea species and varieties
Symphoricarpos species and varieties
Syringa species and varieties
Viburnum lantana
Viburnum opulus varieties
Viburnum plicatum varieties
Weigela species and varieties

Hedera helix
Parthenocissus quinquefolia varieties
Parthenocissus tricuspidata 'Veitchii'
Polygonum aubertii
Rosa arvensis
Rubus caesius
Rubus fruticosus

4. Conifers

Abies nordmanniana
Chamaecyparis species and varieties
Juniperus media varieties
Larix species and varieties
Metasquoia glyptostroboides
Picea orientalis varieties
Picea pungens varieties
Taxus species and varieties
Thuja species and varieties

3. Climbers

Aristolochia macrophylla
Celastrus orbiculatus
Clematis tangutica
Clematis vitalba
Euonymus fortunei varieties

37 Plants resistant to industrial pollution

Resistance to industrial pollution cannot be stated in set figures. A majority of those on the list are included based on mere observation; few were systematically measured or even tested with exposure to gases. It is thus not surprising that much information is contradictory. These contradictions result from observations dating back to the end of the 19th century, the beginning of the 50s, and the 70s. Tests were carried out in various regions, some even overseas, so that the findings can hardly be compared. In the meantime, air pollution, measurement accuracy, and the assessment of toxins have changed so much that a general review is needed. Furthermore, sensitivity to industrial pollution depends among other things on nutritional conditions and exposure to heat and drought, which means that the same species may respond differently under varying circumstances. Of course, seasonal conditions also play a role.

The table cannot, therefore, give any conclusive answers.

Genus/species/variety	Resistant to industrial pollution	Negative experience
1. Deciduous		
<i>Acanthopanax sieboldianus</i>	++	
<i>Acer campestre</i>	++	*
<i>Acer freemanii</i>	+	
<i>Acer ginnala</i>	++	
<i>Acer negundo</i>	++	*





37 Plants resistant to industrial pollution

Genus/species/variety	Resistant to industrial pollution	Negative experience
1. Deciduous		
Acer platanoides varieties	++	*
Acer rubrum varieties	++	*
Acer saccharinum varieties	++	
Aesculus hippocastanum varieties	+	
Aesculus parviflora	++	
Ailanthus altissima	++	
Alnus glutinosa	++	*
Alnus incana	++	*
Amelanchier species	+	
Aucuba japonica	++	
Berberis buxifolia 'Nana'	+	
Berberis gagnepainii lanceifolia	+	
Berberis julianae	+	
Berberis stenophylla	+	
Berberis thunbergii	++	*
Berberis verruculosa	++	
Betula papyrifera	+	*
Betula pendula	++	*
Betula pubescens	+	
Buddleja davidii varieties	+	*
Buxus sempervirens	++	
Calycanthus floridus	++	
Calluna vulgaris	+	
Caragana arborescens	+	*
Carpinus coreana	++	
Castanea sativa	++	
Catalpa bignonioides	++	
Cercidiphyllum japonicum	+	
Chaenomeles japonica	+	*
Chaenomeles speciosa	+	
Chionanthus virginicus	++	
Cladrastis kentukea	++	
Colutea arborescens	+	*
Cornus alba varieties	+	*
Cornus florida varieties	++	
Cornus mas	+	*
Cornus sanguinea	++	*
Cornus stolonifera 'Flaviramea'	+	
Cotoneaster acutifolius	+	
Cotoneaster adpressus	+	
Cotoneaster dammeri	+	
Cotoneaster divaricatus	+	
Cotoneaster horizontalis	+	
Cotoneaster microphyllus 'Cochleatus'	+	
Cotoneaster salicifolius floccosus	+	
Cotoneaster watereri	+	
Corylus avellana	+	
Crataegus lavalleyi 'Carrierei'	++	*

Genus/species/variety	Resistant to industrial pollution	Negative experience
Crataegus monogyna	++	
Crataegus prunifolia	+	*
Daphne mezereum	+	
Deutzia scabra varieties	+	
Elaeagnus angustifolia	++	
Elaeagnus commutata	++	*
Elaeagnus pungens varieties	+	
Erica carnea	+	
Erica vagans	+	
Euonymus europaeus	++	
Euonymus fortunei varieties	+	
Fagus sylvatica	+	
Forsythia intermedia	+	*
Fraxinus excelsior	++	
Fraxinus angustifolia 'Raywood'	+	*
Gaultheria procumbens	+	
Gaultheria shallon	+	
Genista tinctoria	+	
Gleditsia triacanthos	++	
Gymnocladus dioica	+	
Hamamelis japonica	+	
Hippophae rhamnoides	+	
Hypericum calycinum	+	
Ilex aquifolium	++	*
Ilex crenata	+	
Juglans nigra	+	
Kalmia angustifolia	+	
Laburnum anagyroides	+	
Leucothoe walteri	++	
Ligustrum vulgare varieties	++	
Liriodendron tulipifera	++	
Lonicera nitida varieties	+	*
Lonicera pileata	+	
Lonicera tatarica	++	
Lonicera xylosteum	+	
Lycium barbarum	++	
Mahonia aquifolium	+	*
Mahonia bealei	+	*
Malus sylvestris	+	
Malus hybrids	+	
Morus species and varieties	+	
Nyssa sylvatica	++	
Osmanthus heterophyllus	+	
Pachysandra terminalis	+	
Paulownia tomentosa	+	
Phellodendron amurense	+	
Philadelphus coronarius	+	
Philadelphus 'Erectus'	+	
Physocarpus opulifolius	+	*

Explanation of symbols:

++ = sufficiently resistant to industrial pollution / + = resistant to industrial pollution /

* = contradictory or mostly negative experience





Genus/species/variety	Resistant to industrial pollution	Negative experience
Pieris floribunda	++	
Pieris japonica	+	
Platanus acerifolia	++	
Populus balsamifera	+	*
Populus berolinensis	+	
Populus canadensis varieties	++	*
Populus tremula	++	
Prunus avium	+	
Prunus cerasifera 'Nigra'	+	
Prunus laurocerasus varieties	+	
Prunus mahaleb	+	
Prunus padus	++	
Prunus serotina	++	*
Prunus serrulata varieties	+	
Prunus spinosa	++	
Pyracantha coccinea	++	*
Pyrus calleryana varieties	+	
Quercus alba	++	
Quercus palustris	++	
Quercus petraea	++	
Quercus pubescens	++	
Quercus rubra	++	
Quercus turneri 'Pseudoturneri'	+	
Ribes alpinum	++	*
Ribes aureum	+	
Rhododendron Catawbiense hybrids	++	
Rhododendron Azalea hybrids	+	
Rhodotypos scandens	+	
Rhus species and varieties	++	*
Robinia pseudoacacia	++	*
Rosa canina	++	*
Rosa pimpinellifolia	+	
Rosa rubiginosa	+	
Rosa rugosa	+	
Rubus fruticosus	+	
Salix acutifolia 'Pendulifolia'	+	
Salix alba	++	*
Sambucus nigra	++	
Sambucus racemosa	+	
Skimmia japonica	+	*
Sophora japonica varieties	++	
Sorbus aria	++	
Sorbus aucuparia	++	*
Spiraea bumalda	++	
Spiraea vanhouttei	+	*
Stranvaesia davidiana	+	
Symphoricarpos albus laevigatus	++	
Symphoricarpos chenaultii	+	
Symphoricarpos orbiculatus	+	

Explanation of symbols:

++ = sufficiently resistant to industrial pollution / + = resistant to industrial pollution / * = contradictory or mostly negative experience

Genus/species/variety	Resistant to industrial pollution	Negative experience
Syringa vulgaris	++	*
Tamarix ramosissima	++	
Tilia americana varieties	+	
Tilia cordata	++	*
Tilia tomentosa	+	*
Viburnum lantana	++	*
Viburnum opulus	++	
Viburnum rhytidophyllum	+	
Vinca species and varieties	+	
Weigela 'Eva Rathke'	++	
Weigela florida	+	

2. Climbers

Celastrus orbiculatus	++	
Hedera colchica	+	
Hedera helix	++	
Parthenocissus quinquefolia	+	*
Rubus fruticosus	+	
Wisteria sinensis	+	*

3. Conifers

Abies balsamea 'Nana'	+	*
Abies concolor	++	*
Cedrus atlantica 'Glauca'	+	
Chamaecyparis species + varieties	+	
Ginkgo biloba	++	
Juniperus species and varieties	++	*
Larix kaempferi	+	*
Metasequoia glyptostroboides	++	
Picea omorika	+	*
Picea pungens glauca	++	*
Pinus species and varieties	+	*
Pseudotsuga menziesii varieties	+	*
Taxodium distichum	++	
Taxus baccata	++	
Thuja occidentalis	++	
Thuja plicata	++	
Tsuga diversifolia	++	





38 Salt-tolerant plants

Experience with plants' salt damage and tolerance varies greatly. That is not surprising as resistance and sensitivity depend on temperatures, precipitation, soil type, and the amount of salt. In cool, rainy areas, the damage is not nearly as severe as in hot, dry areas or in summer.

The completely contradictory information that occurs is due to these factors.

Such contradictions either are not found or are rare in indices of resistance to salty air (sea-side areas).

Genus/species/variety	Salt tolerant	Contradictory experience	Tolerance of salty air
1. Deciduous trees			
Acer campestre	++	*	
Acer negundo	+	*	
Acer platanoides	++	*	+
Acer pseudoplatanus	++	*	+
Acer rubrum	+	*	
Acer saccharinum	++	*	
Aesculus hippocastanum	+	*	
Aesculus carnea varieties	+		
Ailanthus altissima	++		+
Alnus glutinosa	+	*	
Alnus incana	+		
Betula pendula	+	*	
Carpinus betulus	+	*	
Elaeagnus species and varieties	++		+
Fraxinus excelsior	++	*	
Gleditsia triacanthos varieties	++		
Gymnocladus dioicus	++		
Hippophae rhamnoides	++	*	+
Juglans regia	++	*	
Malus hybrids	+	*	
Malus sylvestris	+	*	
Morus species and varieties	+		
Nyssa sylvatica	++		
Platanus acerifolia	++	*	
Populus alba	++		+
Populus berolinensis	+		
Populus canadensis varieties	++		
Populus canescens	++		
Populus nigra 'Italica'	+	*	
Populus simonii	+		
Populus tremula	++	*	
Prunus avium	++	*	
Prunus serotina	++	*	+
Pyrus calleryana 'Chanticleer'	+		
Quercus robur	++		
Quercus rubra	++		
Rhus species and varieties	++	*	+

Explanation of symbols:

++ = tolerance of (resistant to) salt / + = moderately tolerance of (resistant to) salt

* = contradictory or mostly negative experience

Genus/species/variety	Salt tolerant	Contradictory experience	Tolerance of salty air
Robinia species and varieties	++	*	+
Salix alba	+		
Salix alba 'Tristis'	++		
Salix caprea	+		
Salix matsudana 'Tortuosa'	++		
Sophora japonica	++		
Sorbus aria varieties	+		
Sorbus aucuparia	+		
Ulmus hybrids	+	*	
2. Shrubs			
Acer ginnala	+		
Aesculus parviflora	++	*	
Amelanchier lamarckii	+		
Arctostaphylos uva-ursi	+		+
Aronia species and varieties	++		
Berberis thunbergii 'Atropurpurea'	+		
Calluna vulgaris	+		
Caragana arborescens	++		
Ceanothus delilianus varieties	++		
Clethra alnifolia	+	*	+
Cornus mas	+		
Cornus sanguinea	+	*	
Cornus stolonifera 'Flaviramea'		*	+
Cotoneaster franchetii			+
Cotoneaster horizontalis			+
Crataegus monogyna	+		
Elaeagnus angustifolia	++		+
Gaultheria procumbens	+		
Hippophae rhamnoides	++	*	+
Hydrangea arborescens varieties	+		
Hydrangea hybrids			+
Hydrangea quercifolia	+		
Hypericum kalmianum varieties	++		
Kalmia angustifolia	+		
Ligustrum ovalifolium			+
Ligustrum vulgare	+	*	
Lonicera nitida varieties			+
Lonicera tatarica			+
Lonicera xylosteum	++	*	
Lycium barbarum	++	*	+
Mahonia aquifolium	+		+
Malus hybrids	+	*	
Philadelphus varieties	+		
Physocarpus opulifolius	+		
Potentilla fruticosa varieties	++	*	
Prunus padus	+	*	
Prunus serotina	++	*	
Prunus spinosa	++	*	





Genus/species/variety	Salt tolerant	Contradictory experience	Tolerance of salty air
Ptelea trifoliata	++		
Pyracantha hybrids	+		+
Rhamnus catharticus	++	*	+
Rhamnus frangula	+	*	+
Ribes alpinum	++		
Ribes aureum	+		
Rosa canina	+	*	
Rosa multiflora			+
Rosa nitida			+
Rosa pimpinellifolia			+
Rosa rubiginosa			+
Rosa rugotida	++		
Rosa rugosa	++	*	
Salix repens varieties			+
Sambucus nigra	++		+
Spiraea arguta	+		
Spiraea bumalda 'Anthony Waterer'			+
Spiraea vanhouttei			+
Symphoricarpos species and varieties	++	*	
Syringa vulgaris			+
Tamarix parviflora	++		+
Tamarix ramosissima	++		+
Vaccinium corymbosum	+		
Vaccinium vitis-idaea varieties			+
Viburnum burkwoodii			+
Viburnum lantana	++	*	
Viburnum opulus	+	*	
3. Climbers			
Campsis radicans varieties	++		
Celastrus orbiculatus	++		
Parthenocissus quinquefolia			+
Polygonum aubertii			+
Wisteria sinensis			+
4. Conifers			
Juniperus communis	+		+
Juniperus horizontalis varieties	+		
Juniperus media 'Pfitzeriana'	+		
Juniperus sabina 'Tamariscifolia'			+
Juniperus virginiana	++	*	+
Picea pungens glauca	++	*	+
Pinus banksiana	++		
Pinus mugo	++	*	+
Pinus nigra austriaca	++	*	+
Pinus ponderosa	+		
Pinus sylvestris	+	*	+

39 Indigenous plants

Plant species indigenous to central Europe are usually not spread across the whole region, but rather often found in certain sections. Some are exclusive to particular areas owing to their special abilities. In order to use the plants completely in accordance with their proper landscape, such special origins must be carefully observed to prevent the contamination of flora in critical plantings where plant types foreign to the vegetation are introduced. To this end, special studies of the location are recommended. It should, however, be kept in mind that the centuries of use of the wild species makes it difficult to pinpoint the original boundaries for many species.

Genus/species/variety	Found everywhere	Found in regions	Found in special areas
1. Deciduous trees			
Acer campestre	+		
Acer platanoides	+		
Acer pseudoplatanus	+		
Alnus glutinosa	+		
Alnus incana		+	
Betula pendula	+		
Betula pubescens		+	+
Carpinus betulus	+		
Castanea sativa		+	
Fagus sylvatica	+		
Fraxinus excelsior	+		
Juglans regia			+
Malus sylvestris		+	
Populus canescens		+	
Populus nigra		+	
Populus tremula	+		
Prunus avium	+		
Prunus padus		+	
Pyrus communis		+	
Quercus petraea	+		
Quercus robur	+		
Salix alba	+		
Salix caprea	+		
Salix daphnoides		+	
Salix fragilis	+		
Sorbus aria		+	
Sorbus aucuparia	+		
Sorbus domestica		+	
Sorbus intermedia			+
Sorbus torminalis		+	
Tilia cordata		+	
Tilia europaea		+	
Tilia platyphyllos		+	
Ulmus carpinifolia		+	
Ulmus glabra	+		
Ulmus laevis			+





39 Indigenous plants

Genus/species/variety	Found everywhere	Found in regions	Found in special areas
2. Shrubs			
Amelanchier ovalis		+	
Arctostaphylos uva-ursi			+
Berberis vulgaris		+	
Buxus sempervirens			+
Calluna vulgaris	+		
Colutea arborescens			+
Cornus mas			+
Cornus sanguinea	+		
Corylus avellana	+		
Crataegus laevigata	+		
Crataegus monogyna	+		
Cytisus nigricans		+	
Cytisus scoparius		+	
Daphne cneorum			+
Daphne mezereum		+	
Empetrum nigrum		+	
Erica carnea			+
Erica cinerea			+
Erica tetralix		+	
Euonymus europaeus	+		
Genista sagittalis		+	
Genista tinctoria		+	
Hippophae rhamnoides		+	
Ilex aquifolium		+	
Ledum palustre			+
Ligustrum vulgare		+	
Lonicera caerulea			+
Lonicera xylosteum		+	
Mespilus germanica			+
Myrica gale			+
Prunus mahaleb		+	
Prunus padus		+	
Prunus spinosa	+		
Rhamnus catharticus		+	
Rhamnus frangula	+		
Ribes alpinum		+	
Rosa arvensis		+	
Rosa canina	+	+	
Rosa gallica		+	
Rosa glauca		+	
Rosa pimpinellifolia		+	+
Rosa rubiginosa		+	
Rubus fruticosus	+	+	+
Rubus idaeus	+		
Salix aurita	+		+
Salix cinerea	+		
Salix daphnoides varieties	+		
Salix elaeagnos			

Genus/species/variety	Found everywhere	Found in regions	Found in special areas
Salix purpurea	+		
Salix repens			+
Salix rosmarinifolia			
Salix smithiana		+	
Salix triandra			
Salix viminalis	+		
Sambucus nigra	+		
Sambucus racemosa		+	
Ulex europaeus			+
Vaccinium vitis-idaea		+	
Viburnum lantana		+	
Viburnum opulus	+		
3. Climbers			
Clematis alpina			+
Clematis vitalba		+	
Hedera helix	+		
Lonicera caprifolium		+	
Lonicera periclymenum		+	
Rosa arvensis		+	
Rubus fruticosus	+	+	+
4. Conifers			
Juniperus communis		+	
Juniperus sabina			+
Larix decidua			+
Picea abies		+	
Pinus cembra			+
Pinus mugo			+
Pinus sylvestris		+	
Taxus baccata		+	

40 Freely growing indigenous hedges

For natural hedges, both in open landscapes and in settled areas, plants are needed that like light and warmth, tolerate drought and wind, and shoot prolificously. Most of the species named form such a dense canopy of leaves that no weeds can grow under the hedges. Perennials are useful only at the edges where more light enters.





Genus/species/variety	Height	Likes light	Tolerates shade	Thorns/Prickles	Good for birds
1. Deciduous trees					
<i>Acer campestre</i>	8 - 12 m	+	+		+
<i>Carpinus betulus</i>	5 - 20 m	+	+		+
<i>Fraxinus excelsior</i>	20 - 35 m	+			
<i>Malus sylvestris</i>	5 - 10 m	+	+	+	+
<i>Populus tremula</i>	10 - 15 m	+	-		
<i>Prunus avium</i>	15 - 20 m	+			+
<i>Prunus padus</i>	3 - 10 m	+	+		+
<i>Quercus petraea</i>	20 - 35 m	+	+		+
<i>Quercus robur</i>	30 - 35 m	+	+		+
<i>Rhamnus catharticus</i>	2 - 3 m	+	+	+	+
<i>Salix caprea</i>	3 - 8 m	+	-		
<i>Sorbus aucuparia</i>	5 - 10 m	+	+		
<i>Ulmus carpinifolia</i>	25 - 35 m	+			
2. Shrubs					
<i>Amelanchier ovalis</i>	1 - 3 m	+	-		+
<i>Berberis vulgaris</i>	1 - 3 m	+	+	+	+
<i>Cornus mas</i>	3 - 6 m	+	+		+
<i>Cornus sanguinea</i>	1 - 5 m	+	+		+
<i>Corylus avellana</i>	4 - 6 m	+	+		+
<i>Crataegus laevigata</i>	2 - 5 m	+	+	+	+
<i>Crataegus monogyna</i>	2 - 6 m	+	+		+
<i>Euonymus europaeus</i>	2 - 6 m	+	+		+
<i>Ilex aquifolium</i>	2 - 5 m	-	+	+	+
<i>Ligustrum vulgare</i>	2 - 5 m	+	+		+
<i>Lonicera caerulea</i>	0.5 - 1.5 m	-	+		+
<i>Lonicera xylosteum</i>	1 - 2 m		+		+
<i>Prunus mahaleb</i>	3 - 6 m	+			+
<i>Prunus spinosa</i>	1 - 3 m	+	-	+	+
<i>Rhamnus catharticus</i>	2 - 3 m	+	+	+	+
<i>Rhamnus frangula</i>	2 - 5 m	+	+		+
<i>Rosa canina</i>	1 - 3 m	+	+	+	+
<i>Rosa gallica</i>	0.5 - 1 m	+		+	+
<i>Rosa glauca</i>	1 - 3 m	+	-	+	+
<i>Rosa pimpinellifolia</i>	0.5 - 2 m	+	-	+	+
<i>Rosa rubiginosa</i>	2 - 3 m	+	-	+	+
<i>Rubus fruticosus</i>	1 - 2 m	+	+	+	+
<i>Sambucus nigra</i>	2 - 7 m	+	+		+
<i>Viburnum lantana</i>	2 - 4 m	+	+		+
<i>Viburnum opulus</i>	2 - 4 m		+		+
3. Climbers					
<i>Clematis vitalba</i>	5 - 15 m	+	+		+
<i>Lonicera caprifolium</i>	2 - 5 m		+		+
<i>Lonicera periclymenum</i>	1 - 3 m		+		+
<i>Rubus fruticosus</i>	1 - 2 m	+	+	+	+





41 Plants for bees

Apicultural plants are good for honey production and feeding the honeybees and wild bees. This list concerns the flower nectar and pollen, but also the honeydew. **See also chapter Insect pastures page 874.**

Genus/species/variety	Nectar	Pollen	Honeydew
1. Deciduous trees			
Acer campestre	++		*
Acer opalus	++		*
Acer platanoides	++	+	*
Acer pseudoplatanus	+++	+	*
Acer tataricum	+++		
Aesculus hippocastanum	++	+	*
Aesculus carnea	++	+	*
Alnus species		++	*
Betula species		+	*
Carpinus betulus			*
Castanea sativa	++	+	*
Cercis canadensis		++	
Euodia hupehensis	+++		
Fagus sylvatica		++	*
Fraxinus excelsior		+	*
Juglans regia		+	*
Malus species and varieties	+++	+++	
Populus species and varieties		++	*
Prunus species and varieties	+++	+++	*
Pyrus communis	+++	++	
Prunus padus	+	+	
Pyrus species and varieties	+	++	
Quercus petraea		+	*
Quercus robur		++	*
Rhamnus catharticus	+		*
Robinia species and varieties	+++	+	*
Sophora japonica	++	+	
Sorbus aria	+		
Sorbus aucuparia	++	++	
Sorbus domestica	++	++	
Sorbus torminalis	++	++	
Salix species and varieties	+++	+++	
Tilia americana	++		
Tilia cordata	+++		*
Tilia euchlora	++		
Tilia europaea	++		*
Tilia flavescens			
Tilia hennryana	+++		*
Tilia mongolica		++	*
Tilia platyphyllos		++	*
Tilia tomentosa	+++		
Ulmus carpinifolia	++		
Ulmus hybrids		++	*
Ulmus laevis		++	*

Explanation of symbols: +++ = very suitable / ++ = quite suitable / + = recommended / * = proliferous

Genus/species/variety	Nectar	Pollen	Honeydew
2. Shrubs			
Amelanchier species and varieties	+		
Berberis species and varieties	+		
Buddleja species and varieties	+		
Buxus sempervirens varieties	+		
Calluna vulgaris varieties	+++		
Caryopteris species and varieties	+		
Cornus sanguinea	+		
Cornus mas	++	+	
Corylus species and varieties		++	*
Cotoneaster species and varieties	++		
Crataegus species and varieties	+	+	
Cytisus species and varieties	+	+	
Elaeagnus species and varieties	+		
Erica species and varieties	++	++	
Euonymus europaeus	+		
Ligustrum vulgare	+		
Lonicera xylosteum	+		
Lycium barbarum	+	+	
Malus hybrids varieties	+++	+++	
Mespilus germanica	+		
Prunus species and varieties	+	+	
Rhamnus catharticus	+		
Rhamnus frangula	++	+	
Ribes species	+		
Rosa species and varieties	++		
Rubus fruticosus	++	++	
Rubus idaeus	+++	++	
Salix species and varieties	+++	+++	
Sambucus nigra	+	++	*
Spiraea species and varieties	+		
Viburnum species and varieties	+		

3. Conifers			
Abies species			*
Larix decidua		+	*
Picea abies			*
Pinus sylvestris			*
Taxus baccata		+	





42 Plants for birds

Almost all plant fruits are accepted by some type of bird, some by very many (such as *Sambucus nigra* or *Sorbus aucuparia*), others only by one type of bird (such as *Lonicera xylosteum*). The number of visiting birds is not, however, the only criterion for selection. Often, the birds are common and not picky about their feed. Plants that are only frequented by a few types of birds are also indispensable for the overall biological cycle. The plants listed here are very popular among many birds. The thorns and dense branching contribute to the protection of nests. This information is based on many years of observation in the test garden at Weihenstephan near Munich.

Genus/species/variety	Visited often	Thorns/prickles	Preferred for nests
1. Deciduous trees			
<i>Acer</i> species and varieties	+		+
<i>Alnus</i> species and varieties	+		
<i>Amelanchier</i> species and varieties	++		
<i>Betula</i> species and varieties	+		
<i>Broussonetia papyrifera</i>		++	
<i>Carpinus betulus</i>			+
<i>Crataegus</i> species and varieties	+	+	+
<i>Fagus sylvatica</i>	+		
<i>Fagus sylvatica</i> - trimmed			++
<i>Malus</i> species and varieties	+		
<i>Morus</i> species and varieties	+		
<i>Prunus</i> species and varieties	+		
<i>Quercus</i> species	+		
<i>Robinia pseudoacacia</i>		+	
<i>Sorbus</i> species and varieties	++		
<i>Tilia</i> species	+		
2. Shrubs			
<i>Acer campestre</i> - trimmed			++
<i>Amelanchier</i> species and varieties	++		+
<i>Aronia</i> species and varieties	+		
<i>Berberis</i> species and varieties	+	+	+
<i>Carpinus betulus</i> - trimmed			++
<i>Chaenomeles</i> species and varieties	+	+	
<i>Cornus</i> species and varieties	+		+
<i>Corylus</i> species and varieties	+		
<i>Cotoneaster</i> species and varieties	+		
<i>Crataegus</i> species and varieties	+	+	+
<i>Crataegus monogyna</i> - trimmed		+	++
<i>Elaeagnus</i> species and varieties	+	+	
<i>Euonymus</i> species and varieties	+		
<i>Hippophae rhamnoides</i>	+	+	+
<i>Ilex</i> species and varieties		+	+

Explanation of symbols: ++ = visited very frequently / + = visited frequently

Genus/species/variety	Visited often	Thorns/prickles	Preferred for nests
<i>Ligustrum</i> species and varieties	+		+
<i>Lonicera</i> species and varieties	+		+
<i>Lycium barbarum</i>	+	+	
<i>Mahonia</i> species and varieties	+	+	
<i>Malus</i> species and varieties	+		
<i>Photinia villosa</i>	+		
<i>Prunus</i> species and varieties	++		
<i>Prunus spinosa</i>	+	+	++
<i>Pyracantha</i> hybrids varieties	++	+	+
<i>Rhamnus</i> species	+	+	
<i>Ribes</i> species and varieties	+	+	+
<i>Rosa</i> species and varieties	+	+	+
<i>Rubus</i> species and varieties	+	+	++
<i>Sambucus</i> species	++		
<i>Symphoricarpos</i> species and varieties			+
<i>Syringa vulgaris</i>			+
<i>Vaccinium</i> species	+		
<i>Viburnum</i> species and varieties	+		
3. Climbers			
<i>Clematis</i> species and varieties			+
<i>Euonymus fortunei</i> varieties	+		+
<i>Hedera</i> species and varieties	+		+
<i>Lonicera</i> species and varieties	+		+
<i>Parthenocissus</i> species and varieties	+		+
<i>Rosa</i> - Climbing Roses	+	+	+
<i>Rubus fruticosus</i>	+	+	++
4. Conifers			
<i>Abies</i> species	+		+
<i>Cedrus</i> species and varieties	+		+
<i>Chamaecyparis</i> species and varieties			+
<i>Juniperus</i> species and varieties	+		+
<i>Larix</i> species	+		+
<i>Picea</i> species and varieties	+		+
<i>Pinus</i> species and varieties	+		+
<i>Pseudotsuga menziesii caesia</i>			+
<i>Taxus</i> species and varieties	+		+
<i>Taxus baccata</i> - trimmed			++
<i>Thuja</i> species and varieties			+
<i>Tsuga</i> species	+		+





43 Plants to hold soil on embankments and slopes

Plants that hold top soil on embankments and slopes have to have a robust, intense root system, which should also be resistant to mechanical loads. Plants that form many runners are very useful. Incorrectly formed embankments or loose material cannot, however, be held together with plants alone. To do this, additional technical measures have to be taken.

A In open landscapes

Genus/species/variety	Roots	Runners	Resistance to concurring
1. Deciduous plants			
Acer campestre	intense		moderate
Acer platanoides	intense		moderate
Acer pseudoplatanus	deep		very good
Alnus glutinosa	very intense		very good
Alnus incana	very intense	++	very good
Berberis vulgaris	intense	+	very good
Betula pendula	very intense		sensitive
Carpinus betulus	intense		moderate
Clematis vitalba	intense		good
Cornus mas	intense		
Cornus sanguinea	very intense	+++	moderate
Corylus avellana	intense	+	good
Crataegus laevigata	intense		good
Crataegus monogyna	deep		good
Cytisus scoparius	deep		moderate
Fagus sylvatica	extremely intense		sensitive
Fraxinus excelsior	deep		good
Hedera helix	intense		good
Hippophae rhamnoides	deep	+++	good
Ligustrum vulgare	intense	+	very good
Lonicera xylosteum	intense		moderate
Malus sylvestris	intense	+	moderate
Populus alba varieties	very intense	+++	good
Populus canescens	very intense	+++	good
Populus tremula	very intense	+++	very good
Prunus padus	intense	+++	good
Prunus spinosa	intense	+++	good
Pyrus communis	deep	++	good
Quercus petraea	deep		good
Quercus robur	deep		good
Rhamnus catharticus	deep	+	good
Rhamnus frangula varieties	intense	+	moderate
Rosa arvensis	deep		good
Rosa canina	deep	++	moderate
Rosa glauca	deep		good
Rosa pimpinellifolia	intense	+++	good
Rosa rubiginosa	deep		good
Rubus fruticosus	intense	+	good
Salix alba	intense		very good
Salix caprea	intense		very good
Salix cinerea	intense		very good

Explanation of symbols: +++ = very strong / ++ = strong / + = slight





Genus/species/variety	Roots	Runners	Resistance to covering
Salix elaeagnos	intense		very good
Salix fragilis	very intense		very good
Salix purpurea	deep		very good
Salix triandra	intense		very good
Salix viminalis	intense		very good
Sambucus nigra	intense	+	very good
Sambucus racemosa	intense		very good
Sorbus aucuparia	intense	+	good
Rubus idaeus	intense	++	very good
Tilia cordata	very intense		sensitive
Ulmus carpinifolia	intense	+	moderate
Ulmus glabra	intense		moderate
Viburnum lantana	intense		good
Viburnum opulus	intense	+	good
Vinca major	intense		good
2. Conifers			
Larix decidua	deep		good
Pinus sylvestris	deep		good

The following list is for alternative and complementary beds in urban areas. Basically, indigenous species are preferred for such tasks within settlements. Extreme local conditions that indigenous forest trees and shrubs cannot handle justify resorting to foreign plants.

B In settled areas

Bush layers are used to secure embankments, dams, dumps and slopes. For this purpose, branches of species of woody plants.

Genus/species/variety	Roots	Runners	Resistance to covering
1. Deciduous plants			
Acer negundo	intense		moderate
Acer saccharinum	very intense		good
Ailanthus altissima	intense	+++	good
Alnus cordata	intense		good
Alnus spaethii	intense		good
Amelanchier lamarckii	intense		moderate
Berberis ottawensis varieties	intense		very good
Buddleja davidii varieties	deep		good
Cercis siliquastrum	intense	++	moderate
Chaenomeles hybrids	intense	+	moderate
Caragana arborescens	deep		good
Cornus alba	intense		good
Cornus stolonifera 'Flaviramea'	very intense	++	good
Cotinus coggygria	intense		moderate
Cotoneaster species	intense		good
Crataegus coccinea	deep		good
Crataegus lavallei 'Carrierei'	deep		good





43 Plants to hold soil on embankments and slopes

Genus/species/variety	Roots	Runners	Resistance to covering
1. Deciduous plants			
Elaeagnus angustifolia	very intense		good
Elaeagnus commutata	very intense	+++	good
Forsythia varieties	intense		very good
Gaultheria shallon	very intense	+++	sensitive
Hypericum calycinum	intense	+++	moderate
Ligustrum ovalifolium	intense		good
Lonicera japonica repens	intense		moderate
Lonicera ledebourii	intense		good
Lycium barbarum	intense		good
Philadelphus coronarius	intense		good
Physocarpus opulifolius	intense		moderate
Platanus acerifolia	very intense		very good
Populus balsamifera	very intense		very good
Populus berolinensis	very intense	++	very good
Populus canadensis	very intense		very good
Potentilla fruticosa	intense		moderate
Prunus serotina	intense		moderate
Pterocarya fraxinifolia	extremely intense	+++	good
Quercus rubra	very intense		sensitive
Ribes divaricatum	intense		good
Robinia pseudoacacia	extremely intense	+++	moderate
Rosa carolina	intense	+++	moderate
Rosa multiflora	intense		good
Rosa nitida	intense	+++	good
Rosa rugosa	intense	+++	good
Rosa rugotida	very intense	+++	good
Symphoricarpos species	very intense	++	good
Syringa vulgaris	very intense	++	good
2. Conifers			
Larix kaempferi	deep		moderate
Metasequoia glyptostroboides	very intense		moderate
Pinus nigra	deep		good

44 Plants for biological engineering methods

Layers of bushes are used to secure embankments, dams, and slopes. The branches of strong-shooting plants are introduced.

Layers of hedges are used in similar ways. For this, plants are needed that are known to form adventive roots and known for their obvious resistance to covering with soil. This, however, is often only seen with young plants.

(Literature: M. SCHIECHTL, 1973; U. SCHLÜTER, 1986)

Genus/species/variety	Bush layers	Hedge layers	Cuttings, etc.
1. Trees			
Acer campestre		+	
Acer negundo		+	
Acer pseudoplatanus		+	
Acer saccharinum		+	
Aesculus hippocastanum		+	
Ailanthus altissima			+
Alnus glutinosa		+	
Alnus incana	+	+	+
Betula pendula		+	
Carpinus betulus		+	





Genus/species/variety **Bush layers** **Hedge layers** **Cuttings, etc.**

Castanea sativa		+	
Fraxinus excelsior		+	
Fraxinus ornus		+	
Populus alba		+	
Populus canescens		+	
Populus nigra	+	+	+
Populus tremula		+	
Prunus mahaleb		+	
Prunus padus		+	
Prunus serotina		+	
Quercus robur		+	
Quercus rubra		+	
Rhus typhina		+	
Salix alba varieties	+		+
Salix caprea		+	
Salix daphnoides varieties	+		+
Salix fragilis	+	+	+
Sorbus aria		+	
Sorbus aucuparia		+	
Ulmus glabra		+	

2. Shrubs

Rosa arvensis		+	
Rosa canina		+	
Rosa rubiginosa		+	
Rosa rugosa		+	
Salix aurita	+	+	+
Salix balsamifera mas	+	+	+
Salix caprea		+	
Salix cinerea	+	+	+
Salix daphnoides varieties	+	+	+
Salix elaeagnos	+	+	+
Salix hastata			+
Salix purpurea varieties	+	+	+
Salix repens varieties	+		+
Salix rosmarinifolia	+		+
Salix smithiana		+	+
Salix triandra	+	+	+
Salix viminalis	+	+	+
Sambucus nigra		+	
Sambucus racemosa		+	
Syringa vulgaris		+	
Viburnum lantana		+	
Viburnum opulus		+	

3. Climbers

Clematis vitalba		+	
Rosa arvensis		+	
Rubus caesius			+
Rubus fruticosus			+

45 Nitrogen-collecting plants

Many plants live symbiotically with bacteria that collect nitrogen (such as Lupine) or actinobacillosis (such as sea buckthorn). The activity of these micro-organisms binds the nitrogen in the air and enriches the soil with the metabolism of the roots of these higher plants. This behaviour is, above all, advantageous in sterile or poor soil for initial planting to facilitate the settlement of other plants later on.

Note: Initial fertilisation will lead to the exact opposite effect for the plants listed as the micro-organisms that collect nitrogen become lazy and no longer actively produce nitrogen. Fertilisation may even lead to depressed habits.

The nitrogen compounds produced are not always good for the following plants. The nitrogen produced by robinias, for instance, hampers beeches and birches while it helps elders, nettles, and others.

Genus/species/variety	Local range	
	wide	narrow

1. Trees

Alnus species and varieties	+	
Cercis siliquastrum/canadensis	+	
Hippophae rhamnoides	+	
Laburnum species and varieties	+	
Robinia pseudoacacia	+	
Sophora japonica	+	

2. Shrubs

Arctostaphylos uva-ursi		+
Caragana arborescens	+	
Ceanothus species and varieties	+	
Cercis siliquastrum		+
Colutea arborescens		
Cytisus species and varieties		+
Elaeagnus species and varieties	+	
Genista species and varieties		+
Hippophae rhamnoides	+	
Laburnum species and varieties	+	
Lespedeza thunbergii		+
Myrica gale		+

46 Pumping plants

Pumping plants are used to drain damp areas biologically when the source of the water is local and limited. To do so, trees and shrubs are needed that have high rates of evaporation with usually large leaf laminae and a high water consumption during the vegetation period.

See table next page





46 Pumping plants

1. Trees

Acer negundo
 Acer platanoides
 Acer pseudoplatanus
 Acer saccharinum
 Aesculus hippocastanum
 Alnus glutinosa
 Alnus incana
 Alnus spaethii
 Fraxinus excelsior
 Juglans nigra
 Populus alba varieties
 Populus canadensis varieties
 Populus canescens
 Populus nigra varieties
 Prunus padus
 Salix alba varieties
 Salix caprea

Salix fragilis
 Ulmus species and varieties

2. Shrubs

Euonymus europaeus
 Physocarpus opulifolius
 Prunus padus
 Rhamnus frangula
 Salix acutifolia 'Pendulifolia'
 Salix aurita
 Salix caprea
 Salix cinerea
 Salix smithiana
 Salix viminalis
 Sambucus canadensis
 Sambucus nigra
 Sorbaria sorbifolia
 Viburnum opulus

47 Village and courtyard trees

A number of central European and naturalised species have long been used in landscapes or settlements with regional and traditional variations and preferences. In the course of the development of the settlement, traditional tree types have been replaced by new tree types. Within the framework of urban renewal projects, the traditional tree types are being used more and more.

Genus/species/variety	Conspicuous flowers
1. Deciduous trees	
Acer platanoides	+
Acer pseudoplatanus	+
Aesculus hippocastanum	+
Alnus glutinosa	
Alnus incana	
Betula pendula	
Carpinus betulus	
Castanea sativa	+
Crataegus laevigata 'Paul's Scarlet'	
Fagus sylvatica	
Fraxinus species	
Fraxinus excelsior	
Juglans cinerea	
Juglans regia	
Malus varieties	+

Genus/species/variety	Conspicuous flowers
Platanus species	
Populus alba varieties	
Populus canescens	
Populus nigra	
Prunus avium	+
Pyrus communis varieties	+
Quercus petraea	
Quercus robur	
Robinia pseudoacacia	+
Salix alba	
Salix daphnoides 'Praecox'	+
Salix fragilis	
Sorbus aucuparia	+
Sorbus domestica	+
Sorbus intermedia	+
Tilia cordata	+
Tilia platyphyllos	+
Tilia europaea	+
Ulmus carpiniifolia	
Ulmus laevis	

2. Conifers

Larix decidua
 Picea abies
 Pinus sylvestris

48 Ground-covering plants

Flat-growing plants that spread quickly are used as quick, long-lasting, and low-maintenance greenery for large areas. Ground-covering varieties should not be mixed among themselves, though, as they may suppress each other reciprocally if both are strong competitors. Good varieties are those that spread with layers (shoots above ground that take root upon contact with the ground) or runners (subterranean root sprouts). The larger or denser the leaves, the better the cover. Small or fine-leaf ground-covering plants should not be used for large areas as they require too much care.

If the plan calls for the planting of new shrubs and trees in areas with existing ground-covering plants, the quick development and competitiveness of the plants must be kept in mind. Experience has shown that only large shrubs or trees survive. Small ones are often no match for the ground-covering plants, which smother or cripple them. This is especially true for the "invasive ones", i.e. ground-covering plants such as dwarf bamboo that grow rampantly through the root systems of other plants.

Note: The indications of growth rate are taken from comparison with *Cotoneaster dammeri* 'Skogholm', the strongest growing ground-covering plant of all.





Genus/species/variety	Leaves	Runners	Layers	Growth rate Number/m ²	Genus/species/variety	Leaves	Runners	Layers	Growth rate Number/m ²
1. Deciduous									
Arctostaphylos uva-ursi	e		+	moderate 3 - 5	Empetrum nigrum	e		+	moderate 5 - 9
Berberis buxifolia 'Nana'	e			slight 6 - 9	Erica carnea varieties	e		+	slight 12 - 16
Berberis candidula	e			slight 3 - 5	Erica vagans varieties	e		+	slight 9 - 12
Berberis frikartii 'Verrucandi'	e			moderate 3 - 5	Euonymus fortunei varieties	e		+	slight 3 - 12
Berberis thunbergii 'Atropurpurea Nana'	sg			slight 6 - 9	Gaultheria procumbens	e	+	+	moderate 9 - 16
Berberis verruculosa	e			moderate 3 - 5	Gaultheria shallon	e	+		strong 4 - 6
Buxus sempervirens arborescens	e			slight 16 - 40	Genista lydia	sg			slight 4 - 6
Calluna vulgaris varieties	e	+	+	slight 9 - 16	Genista radiata	sg			slight 3 - 5
Chaenomeles hybrids varieties	sg	+	+	moderate 1 - 3	Genista sagittalis	sg	+		slight 9 - 16
Cornus canadensis	sg	+		slight 9 - 16	Hedera helix varieties	e		+	slight 3 - 9
Cornus stolonifera 'Kelsey'	sg	+		moderate 3 - 5	Hypericum calycinum	se - e	+		strong 6 - 9
Cotoneaster adpressus	sg		+	slight 6 - 9	Hypericum 'Hidcote'	se - e			moderate 3 - 5
Cotoneaster dammeri varieties	se - e		+	slight/strong 3 - 12	Hypericum moserianum	se			moderate 5 - 6
Cotoneaster horizontalis	sg		+	strong 1 - 3	Ilex crenata varieties	e		+	slight/moderate 3 - 6
Cotoneaster microphyllus 'Cochleatus'	e		+	slight 3 - 5	Kerria japonica	sg	+		moderate 3 - 5
Cotoneaster praecox	sg		+	slight 3 - 6	Lavandula angustifolia varieties	e			slight 5 - 9
Cotoneaster salicifolius 'Parkteppich'	se - e		+	moderate 3 - 5	Ledum palustre	e			slight 3 - 5
Cytisus beanii	sg		+	slight 3 - 6	Leucothoe walteri	e	+	+	moderate 3 - 6
Cytisus decumbens	sg		+	slight 5 - 6	Ligustrum vulgare 'Lodense'	se			slight 5 - 8
Cytisus kewensis	sg			slight 5 - 6	Lonicera japonica repens	se - e		+	strong 2 - 4
Cytisus purpureus	sg		+	slight 3 - 6	Lonicera nitida 'Elegant'	se - e			moderate 3 - 5
Daboecia species and varieties	e		+	slight 9 - 12	Lonicera nitida 'Maigrün'	se - e			slight 4 - 6
Daphne cneorum	e		+	slight 4 - 6	Lonicera pileata	se		+	moderate 3 - 5
Deutzia gracilis	sg			slight 3 - 5	Pachysandra terminalis	e	+		moderate 9 - 16
					Pleioblastus pumilis	e	+		strong 1 - 3

Explanation of symbols: sg = summer green / se = semi-evergreen / e = evergreen





48 Ground-covering plants

Genus/species/variety	Leaves	Runners	Layers	Growth rate Number/m ²
1. Deciduous				
Potentilla fruticosa varieties	sg		+	slight/strong 3 - 6
Prunus laurocerasus varieties	e			strong 1
Pyracantha 'Red Cushion'	eg - e			strong 1 - 2
Rhododendron carolinianum var.	e			slight 2 - 4
Rhododendron Azalea hybrids	eg			slight 3 - 5
Rhododendron impeditum var.	e			slight 3 - 6
Rhododendron keleticum	e			slight 4 - 6
Rhododendron 'Radistrotum'	e			slight 6 - 8
Rhododendron Repens hybrids	e			slight 6 - 8
Rhododendron Yakush. hybrids	e			slight 3 - 6
Ribes alpinum 'Schmidt'	sg		+	moderate 3 - 5
Rosa nitida	sg	+		moderate 3 - 6
Rosa rugotida	sg	+		strong 2 - 5
Ground Cover Roses varieties	sg		+	moderate/ strong 1 - 4
Rubus calycinoides	e		+	moderate 5 - 7
Rubus fruticosus	sg - se	+	+	strong 1 - 3
Salix purpurea 'Pendula'	sg		+	strong 1 - 2
Salix repens argentea	sg		+	moderate 3 - 5
Salix rosmarinifolia	sg		+	moderate 2 - 3
Sasa veitchii	e	+		strong 3 - 5
Spiraea betulifolia 'Tor'	sg			slight 3 - 5
Spiraea bumalda varieties	so			moderate 2 - 4
Spiraea decumbens	so		+	slight 9 - 12

Genus/species/variety	Leaves	Runners	Layers	Growth rate Number/m ²
Spiraea japonica varieties	sg			slight/moderate 3 - 8
Stephanandra incisa 'Crispa'	sg			moderate 4 - 6
Symphoricarpos chenaultii 'Hancock'	sg		+	strong 1 - 3
Vaccinium macrocarpon	e		+	slight 6 - 9
Vaccinium vitis - idaea varieties	e	+		slight 8 - 12
Viburnum davidii	e		+	slight 3 - 5
Vinca major	e		+	strong 5 - 7
Vinca minor varieties	e		+	slight 10 - 15

2. Conifers

Juniperus communis 'Hornibrookii'	e			strong 1
Juniperus communis 'Repanda'	e			moderate 1 - 2
Juniperus horizontalis varieties	e		+	moderate 2 - 5
Juniperus sabina 'Tamariscifolia'	e			moderate 3 - 5
Pinus mugo pumilio	e			moderate 2 - 3
Taxus baccata 'Repandens'	e			moderate 1 - 2

49 Hedges, espalier and borders

Trimmed hedges and tall hedges take up little space as living fences and borders. Hedges and trained espaliers are used to provide greenery against the facades of buildings instead of, or in addition to, vines and other climbers. Borders bring a geometrical order to farm and front gardens, and cemetery plantings, and can be used to enclose small areas.

Explanation of symbols: sg = summer green / se = semi-evergreen / e = evergreen





Numbers per linear meter (single row)	Height		Number/per m				
1. Tall hedge	2xv	100 - 125 cm	125 - 150 cm	150 - 175 cm	175 - 200 cm	200 - 250 cm	2 - 3
2. Espalier hedge	2xv	40 - 60 cm	60 - 100 cm				3 - 4
3. Normal hedge	2xv	80 - 100 cm	100 - 125 cm	125 - 150 cm	150 - 175 cm		4 - 5
4. Border - high	2xv	30 - 40 cm	40 - 60 cm	60 - 80 cm	60 - 100 cm	80 - 100 cm	3 - 7
5. Border - low	2xv	15 - 20 cm	20 - 25 cm	25 - 30 cm	30 - 40 cm	40 - 50 cm	5 - 8

Genus/species/variety	Tall hedge	Espalier	Normal	Border	Genus/species/variety	Tall hedge	Espalier	Normal	Border
1. Deciduous trees					2. Deciduous Shrubs				
Acer campestre	+		+		Spiraea bumalda varieties				+
Carpinus betulus	+	+	+		Spiraea japonica varieties				+
Crataegus species and varieties	+		+		Symphoricarpos albus laevigatus			+	
Fagus sylvatica varieties	+		+		Syringa chinensis			+	
Malus species and varieties		+			Syringa hyacinthiflora varieties		+		
Platanus acerifolia	+				Syringa vulgaris			+	
Quercus cerris			+		3. (Semi-) evergreen Shrubs				
Quercus petraea	+		+		Berberis species and varieties			+	+
Quercus robur	+	+	+		Buxus sempervirens varieties	+		+	+
Robinia hispida 'Macrophylla'		+			Ceanothus species and varieties		+		
Sorbus aria		+			Cotoneaster species and varieties		+	+	+
Tilia cordata	+	+	+		Elaeagnus species and varieties		+		
Tilia flavescens 'Glenleven'	+				Euonymus fortunei 'Vegetus'		+	+	+
Tilia platyphyllos	+	+	+		Ilex species and varieties	+		+	+
Tilia europaea	+	+	+		Lavandula angustifolia				+
2. Deciduous Shrubs					Ligustrum species and varieties		+	+	+
Berberis species and varieties			+	+	Lonicera nitida varieties		+	+	+
Buddleja davidii varieties		+			Lonicera pileata				+
Ceanothus species and varieties		+			Mahonia aquifolium			+	+
Chaenomeles species and varieties		+	+		Osmanthus heterophyllus		+	+	
Cornus mas		+			Prunus laurocerasus varieties		+	+	
Cotoneaster species and varieties		+	+	+	Pyracantha hybrids varieties		+	+	+
Crataegus species and varieties			+		Viburnum burkwoodii		+		
Deutzia gracilis				+	Viburnum 'Pragense'		+		
Escallonia species and varieties		+	+		Viburnum rhytidophyllum		+		
Forsythia species and varieties		+	+		Viburnum tinus			+	+
Hydrangea quercifolia		+			4. Conifers				
Ligustrum species and varieties		+		+	Chamaecyparis species and varieties	+		+	
Lonicera tatarica			+		Cupressocyparis leylandii varieties	+		+	
Lonicera xylosteum			+		Ginkgo biloba		+		
Magnolia liliiflora varieties		+			Juniperus chinensis varieties	+		+	
Magnolia soulangeana varieties		+			Juniperus communis varieties			+	
Malus Hybriden varieties		+			Juniperus virginiana			+	
Potentilla fruticosa varieties			+	+	Larix species	+		+	
Prunus cerasifera 'Nigra'		+	+		Metasequoia glyptostroboides	+		+	
Prunus spinosa			+		Picea abies	+		+	
Ribes sanguineum varieties		+			Picea omorika			+	
Ribes species and varieties			+	+	Pinus mugo			+	+
Rosa species and varieties		+							





49 Hedges, espalier and borders

Genus/species/variety	Tall hedge	Espalier	Normal	Border
<i>Taxus baccata</i>	+		+	
<i>Thuja occidentalis</i> varieties	+		+	+
<i>Thujopsis dolabrata</i>			+	
<i>Tsuga canadensis</i>			+	

50 Climbers

Climbers need support or walls to develop optimally. Dimensions and appearance depend on the shape of the climbing aids. According to the type of climbing, two main groups can be distinguished.

Both groups are further subdivided according to the climbing method.

Trellis climbers

Genus/species/variety	Leaves	Flowers	Fruit	Height
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Twining climbers

<i>Actinidia arguta</i>	sg	white	green, sweet	3 - 6 m
<i>Actinidia chinensis</i>	sg	white	brown, sweet	8-10 m
<i>Actinidia kolomikta</i>	sg	white	green	2 - 3 m
<i>Akebia quinata</i>	sg - se	pink	green, sweet	4 - 6 m
<i>Aristolochia macrophylla</i>	sg	brown	green	8 - 10 m
<i>Celastrus orbiculatus</i>	sg	green	yellow-orange	8 - 12 m
<i>Humulus lupulus</i>	sg	green	green	3 - 8 m
<i>Lonicera japonica repens</i>	se - e	white	red	2 - 3 m
<i>Lonicera brownii</i> 'Dropmore Scarlet'	sg	orange	orange	2 - 3 m
<i>Lonicera caprifolium</i>	sg	white	red	2 - 5 m
<i>Lonicera heckrottii</i>	sg	pink	red	2 - 4 m
<i>Lonicera henryi</i>	e	yellow	blue	5 - 7 m
<i>Lonicera periclymenum</i>	sg	white	red	1 - 5 m
<i>Lonicera tellmanniana</i>	sg	yellow	orange	4 - 6 m
<i>Polygonum aubertii</i>	sg	white	white	8 - 15 m
<i>Wisteria floribunda</i>	sg	blue	green	6 - 8 m
<i>Wisteria sinensis</i>	sg	blue	green	6 - 15 m

Sarmentous plants without suction pads

<i>Clematis alpina</i> varieties	sg	blue	silvery	1 - 2 m
<i>Clematis hybrids</i> varieties	sg	viele	silvery	2 - 4 m
<i>Clematis macropetala</i> varieties	sg	viele	silvery	2 - 3 m
<i>Clematis montana</i> varieties	sg	white	silvery	5 - 8 m
<i>Clematis montana</i> 'Rubens'	sg	pink	silvery	3 - 10 m
<i>Clematis orientalis</i> 'Orange Peel'	sg	yellow	silvery	3 - 5 m
<i>Clematis tangutica</i>	sg	yellow	silvery	4 - 6 m
<i>Clematis texensis</i> varieties	sg	pink	silvery	1 - 1.5 m
<i>Clematis vitalba</i>	sg	white	silvery	10 - 20 m
<i>Clematis viticella</i> varieties	sg	blue	silvery	2 - 5 m
<i>Vitis coignetiae</i>	sg	green	black	6 - 8 m

Explanation of symbols: sg = summer green (no leaves in winter) / se = semi-evergreen / e = evergreen

Genus/species/variety	Leaves	Flowers	Fruit	Height
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Splayed climbers

<i>Jasminum nudiflorum</i>	sg	yellow		2 - 3 m
<i>Rosa arvensis</i>	sg	white	orange-red	1 - 2 m
Climbing Roses	sg	all		2 - 3 m
<i>Rubus fruticosus</i>	sg - se	white	black	1 - 3 m
<i>Rubus henryi</i>	e	pink	black	2 - 3 m

Self climbers

Genus/species/variety	Leaves	Flowers	Fruit	Height
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Plants with suction pads

<i>Parthenocissus quinquefolia</i>	sg	green	black	10 - 15 m
<i>Parthenocissus quinquefolia</i> 'Engelmannii'	sg	green	black	15 - 18 m
<i>Parthenocissus tricuspidata</i> 'Veitchii'	sg	green	black	15 - 18 m

Climbers with suction roots

<i>Campsis radicans</i>	sg	red	green	6 - 15 m
<i>Campsis radicans</i> 'Flava'	sg	yellow	green	4 - 5 m
<i>Campsis tagliabuana</i> 'Mme. Galen'	sg	red		3 - 5 m
<i>Euonymus fortunei radicans</i>	e			2 - 5 m
<i>Euonymus fortunei</i> 'Vegetus'	e	green	orange	3 - 6 m
<i>Euonymus fortunei</i> varieties	e		orange	1 - 3 m
<i>Hedera colchica</i>	e	yellow	black	6 - 8 m
<i>Hedera helix</i>	e	yellow	black	10 - 20 m
<i>Hedera helix</i> 'Woerner'	e	yellow	black	10 - 15 m
<i>Hedera helix hibernica</i>	e	yellow	black	5 - 20 m
<i>Hydrangea petiolaris</i>	sg	white	brown	8 - 12 m

51 Plants for roof garden with good maintenance

This selection is only for roof gardens in unprotected areas exposed to wind.

For a selection of plants for protected roof gardens or courtyards, no special sensitivities need be considered thanks to the protection provided by the building on all sides.

For a special selection:

1. select plants with several stems as they withstand wind pressure and turbulence better than single-stem plants,,
2. loose crowns that allow air to pass instead of compact trees or shrubs which have great wind resistance,
3. small-leaf varieties are damaged less than large-leaf ones,
4. do not use plants that break easily,
5. do not use plants that have aggressive roots (such as Hippophae) lest they take advantage of errors in the use of insulation sheets,





Plants for roof garden with good maintenance 51

6. do not set up a luxurious supply of nutrients for the higher the soil moisture and amount of nutrients, the flatter the roots and the more luxurious the parts above ground will be.

Note: The habit sizes and limitations listed here concern the response of the plants to roof gardens and are not identical to behaviour on level ground! Almost all climbers are useless on roof gardens as they are too sensitive to wind. Usually they do not accept the supports, but rather wind their way into other plants. Climbing aids should be very stable. Climbing plants that have fallen down have to be cut back hard to further new shoots as old shoots no longer climb. The base of the plant has to be in the shade.

(For further information, see publications by KIERMEIER, P., KOLB/SCHWARZ, KRUPKA, B., LIESECKE/LÖSKEN etc., various editions)

Genus/species/variety	Height	Limitations
1. Deciduous trees and large Shrubs		
Acer campestre	3 - 10 m	
Acer ginnala	3 - 6 m	
Acer neglectum 'Annae'	6 - 10 m	may be too big
Amelanchier laevis	3 - 5 m	flowers not wind resistant
Amelanchier lamarckii varieties	3 - 5 m	
Cornus mas	3 - 6 m	
Corylus avellana	3 - 5 m	sensitive when exposed to wind
Crataegus lavalleyi 'Carrierei'	5 - 8 m	
Crataegus coccinea	5 - 7 m	
Crataegus crus galli	5 - 7 m	
Fraxinus ornus varieties	4 - 8 m	very sensitive to frost, flowers not wind resistant
Philadelphus inodorus grandiflorus var.	3 - 4 m	flowers not wind resistant, needs thinning out
Physocarpus opulifolius	3 - 4 m	
Prunus mahaleb	3 - 6 m	many seedlings
Prunus serotina	5 - 10 m	troublesome seedlings
Pyrus salicifolia	4 - 6 m	sensitive to frost, flowers not wind resistant
Salix acutifolia 'Pendulifolia'	4 - 6 m	break easily, needs thinning out
Salix caprea	3 - 6 m	leaves brown from July on during droughts
Sorbus aria varieties	5 - 8 m	
Sorbus aucuparia	5 - 8 m	during droughts loses its leaves
Sorbus hybrida 'Gibbsii'	4 - 6 m	leaf loss due stagnant dampness
Sorbus intermedia	8 - 10 m	maybe too big

Genus/species/variety	Height	Limitations
2. Medium to large Shrubs		
Berberis ottawensis 'Superba'	2 - 4 m	
Berberis thunbergii varieties	0.5 - 2 m	loses its leaves early during droughts
Buddleja alternifolia	2 - 3 m	very overhanging, sensitive to frost
Buddleja davidii varieties	1 - 2 m	sensitive to frost, cut back yearly
Buxus sempervirens 'Bullata'	1 - 2 m	occasionally sensitive to frost
Chaenomeles species and varieties	1 - 2 m	flowers not wind resistant
Cornus alba	2 - 3 m	
Cornus alba 'Sibirica'	1 - 2 m	
Cornus stolonifera 'Kelsey'	0.5 - 1 m	not in hot, dry areas
Cotinus coggygia	2 - 3 m	sensitive to frost
Cotoneaster bullatus	2 - 3 m	occasionally sensitive to frost
Cotoneaster dielsianus	1 - 2 m	
Cotoneaster divaricatus	1 - 2 m	
Cotoneaster acutifolius	1 - 2 m	
Cotoneaster multiflorus	1 - 2 m	occasionally sensitive to frost
Cotoneaster praecox	1 - 1.5 m	occasionally sensitive to frost
Deutzia species and varieties	0.5 - 2 m	not in hot, dry areas
Euonymus alatus	0.2 - 2 m	not in hot, dry areas
Hypericum 'Hidcote'	0.5 - 1 m	sensitive to frost, cut back yearly
Hypericum patulum henryi	0.5 - 1 m	sensitive to frost, cut back yearly
Ilex meserveae varieties	1 - 2 m	sensitive to frost, may lose all their leaves
Kerria japonica varieties	1 - 2 m	sensitive to frost
Kolkwitzia amabilis	2 - 3 m	age quickly, thin out often
Ligustrum obtusifolium regelianum	1 - 2 m	
Ligustrum ovalifolium	2 - 3 m	sensitive to frost
Ligustrum vulgare varieties	2 - 3 m	
Lonicera ledebourii	2 - 3 m	not in dry areas
Lonicera tatarica	2 - 3 m	cut back occasionally
Lonicera xylosteoides 'Clavey's Dwarf'	2 - 3 m	
Lonicera xylosteum	1 - 2 m	not in hot, dry areas
Lycium barbarum	2 - 3 m	very overhanging
Perovskia abrotanoides	1 - 1.5 m	cut yearly
Philadelphus coronarius	2 - 3 m	cut back occasionally
Philadelphus hybrids	1 - 2 m	flowers not wind resistant, thin out often
Potentilla fruticosa varieties	0.5 - 1.3 m	alle all varieties are sometimes sensitive to frost, thin out
Potentilla 'Goldteppich'	0.5 - 1 m	avoid planting too closely
Potentilla 'Sommerflor'	0.5 - 1 m	
Prunus laurocerasus 'Otto Luyken'	1 - 2 m	many vein weevils on humic substrates, then hard to control! Occasionally sensitive to frost
Prunus laurocerasus 'Zabeliana'	1 - 2 m	
Prunus tenella	0.5 - 1.5 m	flowers not wind resistant, cut yearly
Pyracantha 'Red Cushion'	0.5 - 1 m	sensitive to frost, turn back when cold





51 Plants for roof garden with good maintenance

Genus/species/variety	Height	Limitations
2. Medium to large Shrubs		
Pyracantha 'Red Column'	2 - 3 m	sensitive to frost, moderate amount of fruits
Pyracantha 'Soleil d'Or'	1 - 2 m	sensitive to frost
Ribes alpinum 'Schmidt'	0.5 - 1 m	not in hot, dry areas
Ribes aureum	1 - 2 m	falls apart, not in hot, dry areas
Ribes divaricatum	2 - 3 m	not in hot, dry areas
Rosa glauca	1 - 2 m	no competition, loses first leaves starting in August
Rosa multiflora	1 - 2 m	
Rosa rubiginosa	1 - 2 m	somewhat sensitive to wind
Rosa varieties	0.5 - 1 m	yearly care, sensitive to frost
Salix species and varieties		as a rule unsuitable as they lose their leaves early
Salix purpurea 'Pendula'	0.5 - 1 m	slow-growing, prostrate
Salix rosmarinifolia	1 - 1.5 m	not in hot, dry areas
Spiraea bumalda varieties	0.5 - 1 m	cut back often
Spiraea japonica varieties	0.3 - 0.5 m	cut back often
Spiraea vanhouttei	1 - 2 m	flowers sensitive to wind, sensitive to drought
Symphoricarpos albus laevigatus	1 - 2 m	troublesome runners
Symphoricarpos chenaultii	1 - 1.5 m	occasionally sensitive to frost
Symphoricarpos orbiculatus	1 - 1.5 m	occasionally sensitive to frost
Syringa chinensis	2 - 3 m	can shoot from below graft
Syringa microphylla 'Superba'	1 - 1.5 m	
Tamarix species	2 - 3 m	sensitive to frost, cut back frequently
Viburnum farreri	2 - 3 m	flowers sensitive to frost, need thinning out
Viburnum lantana	2 - 3 m	occasionally stripped bare by birds
Weigela hybrids varieties	1 - 2 m	thin out regularly, not in hot, dry areas
3. Small and dwarf shrubs, ground-cover plant		
Cornus stolonifera 'Kelsey'	0.5 - 1 m	not in hot, dry areas
Cotoneaster adpressus	0.2 - 0.5 m	very low-growing
Cotoneaster dammeri varieties	0.2 - 1.2 m	sensitive to frost, froze when cold
Cotoneaster salicifolius 'Parkteppich'	0.3 - 1 m	sensitive to frost
Euonymus fortunei varieties	0.3 - 1 m	sensitive to frost, not for hot, dry extreme areas (colourful varieties susceptible) many fir tree weevils in humid substrates, then hard to stop
Hypericum calycinum	0.2 - 0.3 m	sensitive to frost
Hypericum moserianum	0.3 - 0.5 m	sensitive to frost
Ilex crenata varieties	0.3 - 1.5 m	sensitive to frost, not good in hot, dry areas

Genus/species/variety	Height	Limitations
Ligustrum vulgare 'Lodense'	0.5 - 0.7 m	very low-growing, froze when cold
Lonicera nitida 'Maigrün'	0.5 - 0.8 m	sensitive to frost
Lonicera pileata	0.5 - 1 m	sensitive to frost
Mahonia aquifolium 'Apollo'	0.5 - 1 m	sensitive to frost, avoid sun
Philadelphus 'Erectus'	0.5 - 1 m	flowers not wind resistant
Potentilla 'Goldteppich'	0.5 - 1 m	avoid planting too closely
Potentilla 'Sommerflor'	0.5 - 1 m	
Pyracantha 'Red Cushion'	0.5 - 1 m	sensitive to frost
Rosa - Groud Cover Roses	0.3 - 1.2 m	occasionally sensitive to frost, sensitive to wind, sometimes roots shoot, year round attention
Symphoricarpos chenaultii 'Hancock'	0.8 - 1.2 m	occasionally sensitive to frost
4. Climbers		
Clematis montana 'Rubens'	2 - 5 m	sensitive to frost, flowers sensitive to wind
Clematis tangutica	2 - 3 m	
Euonymus fortunei radicans	1 - 3 m	sensitive to frost, not in hot, dry areas
Hedera helix	3 - 8 m	does not always climb, sensitive to frost
5. Conifers		
Juniperus communis 'Hornibrookii'	0.5 - 1 m	
Juniperus communis 'Repanda'	0.3 - 0.5 m	
Juniperus horizontalis 'Wiltonii'	0.2 - 0.3 m	
Juniperus sabina 'Tamariscifolia'	0.5 - 0.8 m	
Picea abies 'Nidiformis'	1 - 1.5 m	only in shady areas
Picea abies 'Pumila Glauca'	0.3 - 0.5 m	only in shady areas
Pinus leucodermis	4 - 6 m	sensitive to stagnant water
Pinus mugo varieties	1 - 2 m	
Pinus parviflora 'Glauca'	4 - 6 m	may be too big
Pinus parviflora 'Negishi'	1 - 1.5 m	
Pinus sylvestris 'Watereri'	3 - 5 m	
Taxus baccata varieties		many vein weevils on humid substrates, hard to control!
Taxus baccata 'Dovostoniana'	2 - 4 m	may be too big
Taxus baccata 'Nissens Corona'	1 - 3 m	see above
Taxus baccata 'Nissens Präsident'	2 - 3 m	see above
Taxus baccata 'Repandens'	0.5 - 0.7 m	see above
Taxus cuspidata 'Nana'	1 - 2 m	see above





52 Low-maintenance roof gardens

Lignifying plants are not recommended for low-maintenance roof gardens as the strong layers of the substrate (approx. 3-8 cm) are too shallow. With low-maintenance roof gardens, the plants are neither watered nor regularly fertilised; both of these processes are, however, necessary for large lignifying plants to live long lives.

Lignifying plants for simple, high-maintenance roof gardens

To minimise the requirements of maintenance, plants that need great care, such as regular pruning, should not be selected. The thickness of the layers should be increased – “piled up” – as needed, with approx. 1 m² is planned for each plant. As a rule, the plants should not be larger than 0.8-1.0 m for simple intensive greenery in order to avoid frequent watering or fertilisation. For the growth rates, keep in mind that the average ultimate sizes cannot be reached on roofs. Only about 2/3 of the usual height can be expected, accompanied by loose leaves and fewer flowers.

The selection of plants corresponds to the high-maintenance roof gardens in section 3 (small and dwarf plants) and section 5 (conifers), though all plants taller than 1 m should be avoided.

53 Trees for shady courtyards

The opening of inner-city courtyards for residents requires new considerations in the selection of plants. In most narrow, shady quads, large trees can rarely be planted as they could cast the courts into greater darkness than they already have. In such court situations where direct light seldom shines or only does so for brief periods, the trees rarely reach their optimal height. Often, they grow towards the light (crooked), or characteristic crown shapes are lost due to the lack of light. In addition, leaves, fruits and flowers are less plentiful. Problems also occur when the ground is paved too close to the stems of the trees as most varieties lift the pavement.

1. Deciduous trees

- Acer campestre varieties
- Acer neglectum ‘Annae’
- Acer palmatum
- Acer pensylvanicum
- (Acer platanoides green-leaf varieties)
- Acer rufinerve
- (Amelanchier lamarckii varieties)
- Carpinus betulus varieties
- (Cercidiphyllum japonicum)
- Cornus alternifolia
- Cornus controversa

- Cornus florida varieties
- Cornus kousa varieties
- (Cornus mas)
- Crataegus laevigata
- Crataegus lavallei ‘Carrierei’
- Crataegus monogyna
- Crataegus coccinea
- Fagus sylvatica green-leaf varieties
- (Fraxinus excelsior)
- Ilex aquifolium varieties
- (Malus Hybriden green-leaf varieties)
- Ostrya carpinifolia

- (Parrotia persica)
- Prunus padus
- (Quercus petraea)
- (Quercus robur)
- Sorbus aria varieties
- Sorbus arnoldiana varieties
- Sorbus aucuparia varieties
- (Sorbus intermedia varieties)
- (Sorbus torminalis)
- (Tilia americana varieties)

- (Tilia cordata varieties)
- (Tilia europaea varieties)
- Ulmus carpinifolia
- Ulmus hollandica ‘Lobel’

2. Conifers

- Chamaecyparis species and varieties
- Taxus species and varieties
- Thuja species and varieties





54 Heath gardens

"Heaths" are not only understood to be endless heath meadows with Junipers and white, shimmering birches, but also include dwarf shrub formations in areas with high humidity on substrates with little nutrition, which do not necessarily have to be on acidic sandy soil. The most conspicuous heaths are primarily small-leaf Ericaceae, dwarf and rod shrubs such as broom and related varieties, and numerous conifer shrubs and trees such as common hawthorn and birches also grow on heaths. As these plants suppress the herbaceous heaths, they must be used carefully. Heaths do not withstand autumn leaf loss or large amounts of shade. Thus, the herbaceous heaths generally occur around conifers as the needles do not damage them. They should not, however, be used for ground cover under trees and shrubs; rather, use other shade-tolerant Ericaceae such as the *Vaccinium* species.

A Heaths near coasts

Genus/species/variety	Needs light	Tolerates shade
Deciduous plants		
<i>Betula pendula</i> varieties	+	
<i>Betula pubescens</i>	+	
<i>Cytisus scoparius</i> varieties	+	
<i>Crataegus monogyna</i>		+
<i>Empetrum nigrum</i>	+	
<i>Genista sagittalis</i>	+	
<i>Genista tinctoria</i> varieties	+	
<i>Myrica gale</i>	+	
<i>Rhamnus frangula</i>		+
<i>Salix repens argentea</i>	+	
<i>Sorbus aucuparia</i> varieties		+
<i>Ulex europaeus</i>	+	
Varieties of Ericaceae		
<i>Calluna vulgaris</i> varieties	+	
<i>Erica cinerea</i>	+	
<i>Erica tetralix</i>	+	
<i>Erica vagans</i> varieties	+	
<i>Vaccinium vitis-idaea</i> varieties		+
Conifers		
<i>Juniperus communis</i> varieties	+	
<i>Pinus sylvestris</i> varieties	+	

Note:

Broad-leaf plants should not be used in true heaths. Rather, slender-leaf species – especially grasses – are ideal complements. The recommended varieties are *Deschampsia flexuosa*, *Festuca ovina*, *Festuca tenuifolia* and *Molinia caerulea*. In shady areas, ferns can also be used. For more, see planting tips for perennials, list of heath plants.

B Alpine rose heaths

Heaths in mountainous regions are similar to those in plains, though the species usually differ.

Genus/species/variety	Needs light	Tolerates shade
Deciduous plants		
<i>Clematis alpina</i>		+
<i>Crataegus monogyna</i>		+
<i>Cytisus purpureus</i>	+	
<i>Daphne cneorum</i>	+	
<i>Lonicera caerulea</i>		+
<i>Ribes alpinum</i>		+

Varieties of Ericaceae

<i>Arctostaphylos uva-ursi</i>	+	
<i>Empetrum nigrum</i>	+	
<i>Erica carnea</i> varieties	+	
<i>Rhododendron ferrugineum</i>		+
<i>Rhododendron hirsutum</i>		+
<i>Vaccinium vitis-idaea</i> varieties		+

Conifers

<i>Juniperus communis</i> varieties	+	
<i>Larix decidua</i>	+	
<i>Picea abies</i> varieties		+
<i>Pinus cembra</i>	+	
<i>Pinus mugo</i> varieties	+	
<i>Pinus nigra</i> varieties	+	
<i>Pinus sylvestris</i> varieties		

C Heath-like formations from foreign countries

Genus/species/variety	Needs light	Tolerates shade
Deciduous plants		
<i>Aronia</i> species and varieties		+
<i>Betula</i> species and varieties	+	
<i>Clethra alnifolia</i>		+
<i>Cornus canadensis</i>		+
<i>Cornus stolonifera</i> 'Kelsey's'		+
<i>Cytisus</i> species and varieties	+	
<i>Daboecia</i> species and varieties		+
<i>Elaeagnus pungens</i> varieties		+
<i>Fothergilla gardenii</i>		+
<i>Genista</i> species and varieties	+	
<i>Hebe</i> species and varieties	+	
<i>Ilex crenata</i> varieties		+





Genus/species/variety	Needs light	Tolerates shade
Ilex meserveae varieties		+
Ilex verticillata	+	
Rubus calycinoides	+	
Skimmia japonica varieties		+
Sorbus species and varieties	+	
Spiraea betulifolia		+
Spiraea prunifolia	+	

Ericaceae varieties

Gaultheria procumbens		+
Gaultheria shallon		+
Kalmia angustifolia 'Rubra'		+
Kalmia latifolia varieties		+
Leucothoe walteri		+
Pernettya mucronata varieties		+
Pieris floribunda		+
Pieris japonica varieties		+
Rhododendron Wild varieties		+
Rhododendron impeditum varieties	+	
Rhododendron keleticum	+	
Rhododendron minus		+
Rhododendron 'Radistrotum'		+
Rhododendron Azalea hybrids		+
Vaccinium macrocarpon	+	

Conifers

Juniperus species and varieties	+	
Larix kaempferi	+	
Pinus contorta	+	
Pinus densiflora 'Umbraculifera'	+	
Pinus leucodermis	+	
Pinus parviflora 'Glauca'	+	
Pinus pumila 'Glauca'	+	
Thuja standishii	+	
Tsuga diversifolia		+
Tsuga mertensiana		+

55 Plants for tubs and pots

As attractive as potted plants are, they need a lot of care in the final analysis. It does not suffice to set up decorative pots in pedestrian zones, atriums, squares or terraces. A main problem is the surplus of organic material in most substrates that results in a decrease in the mass of the soil between 30-50%. The plants lose their stability and even starve. Plants that need humus thus are rarely good in pots. It is extremely necessary to add material that stabilises the structure and to calculate for 10-20% loss from the outset. Many potted plants are clearly stymied after the first year if they only live in root ball material and no nutrients are added. Slow-release fertilisers are recommended. Regular watering is a primary requirement for the survival of the plants. Plants sensitive to frost

are more so in a pot than in a bed. Thus, the location has to be selected with care. The size of the pot depends on the size of the plants and their number. Too many plants or plants that are too big will cramp each other and gradually become gaunt.

As a rule, the diameter of the pot should be at least one third of the mean diameter of the largest plant selected with a minimum substrate depth of 40-60 cm. The more the better, as less soil means more maintenance.

1. Deciduous trees

Acer ginnala
 Acer japonicum 'Aconitifolium'
 Acer rufrinerve
 Amelanchier lamarckii
 Berberis ottawensis varieties
 Berberis thunbergii 'Atropurpurea Nana'
 Catalpa bignonioides 'Nana'
 Clerodendron trichotomum fargesii
 Cotinus coggygria varieties
 Cotoneaster species and varieties
 Crataegus lavalley 'Carrierei'
 Crataegus coccinea
 Cytisus species and varieties
 Elaeagnus species and varieties
 Enkianthus perulatus
 Genista species and varieties
 Hydrangea arborescens varieties
 Lonicera tatarica varieties
 Mahonia aquifolium varieties
 Malus 'Red Jade' and other Varieties
 Nothofagus antarctica
 Perovskia abrotanoides
 Philadelphus 'Erectus'
 Potentilla fruticosa varieties
 Prunus fruticosa 'Globosa'
 Ptelea trifoliata
 Pyrus salicifolia
 Quercus pontica
 Rhodotypos scandens
 Robinia 'Casque Rouge'
 Robinia hispida varieties
 Rosa glauca
 Salix purpurea 'Pendula'
 Sorbus serotina
 Sorbus thuringiaca 'Fastigiata'
 Spiraea betulifolia varieties
 Spiraea bumalda
 Spiraea decumbens
 Spiraea japonica varieties
 Spiraea nipponica varieties
 Staphylea colchica

Stephanandra incisa 'Crispa'
 Symphoricarpos chenaultii 'Hancock'
 Syringa meyeri 'Palibin'
 Syringa microphylla 'Superba'
 Syringa patula 'Miss Kim'
 Tamarix parviflora

2. Evergreen broad-leaf shrubs

Berberis buxifolia 'Nana'
 Berberis candidula
 Berberis frikartii varieties
 Berberis gagnepainii varieties
 Berberis media varieties
 Berberis verruculosa
 Buxus sempervirens varieties
 Cotoneaster species and varieties
 Daphne cneorum
 Elaeagnus species and varieties
 Erica carnea varieties
 Hedera colchica varieties
 Hedera helix varieties
 Hypericum species and varieties
 Ilex species and varieties
 Lavandula angustifolia varieties
 Ligustrum delavayanum
 Ligustrum ovalifolium 'Aureum'
 Lonicera nitida varieties
 Lonicera pileata
 Osmanthus heterophyllus
 Prunus laurocerasus varieties
 Pyracantha hybrids varieties
 Rhododendron Azalea hybrids
 Rhododendron impeditum varieties
 Rhododendron keleticum
 Rhododendron 'Radistrotum'
 Rubus henryi
 Skimmia japonica varieties
 Viburnum davidii
 Viburnum tinus
 Vinca major





55 Plants for tubs and pots

3. Conifers

Chamaecyparis obtusa 'Nana Gracilis'	Pinus densiflora 'Umbraculifera'
Juniperus communis 'Repanda'	Pinus mugo varieties
Juniperus horizontalis varieties	Pinus nigra varieties
Juniperus sabina varieties	Pinus parviflora varieties
Microbiota decussata	Pinus sylvestris 'Watereri'
Picea abies 'Nidiformis'	Taxus species and varieties
Picea abies 'Pumila Glauca'	

56 Plant weights

Plant weights and root ball sizes can only be approximated as many factors influence weight and root ball size. The shape of the root ball, the specific weight of the soil or substrate, the water saturation, and other factors leave a lot of leeway. The information below is based on experience and can be used to extrapolate transport weights.

Category	Size in cm	Approx. weight in kg/plant	Rootball-diameter in cm
Ground-covering shrubs	1.5 l Container	1.3	
	2 l Container	1.7	
Evergreens	20 - 30	3	
	30 - 40	4	
	40 - 50	6	
	50 - 60	9	
	60 - 80	13	
	80 - 100	18	
	100 - 125	25	
	125 - 150	40	
150 - 200	60		
Rhododendron	30 - 40	3	
	40 - 50	4.5	
	50 - 60	6	
	60 - 70	8	
	70 - 80	11	
	80 - 90	16	
	90 - 100	25	
100 - 120	40		
120 - 140	60		
Decorative shrubs and hedges	2 xv, o.B., 80 - 100	0.5	
	2 xv, o.B., 100 - 150	1	
	2 xv, o.B., 150 - 200	2	
	3 xv, m.B., 80 - 100	8	
	3 xv, m.B., 100 - 125	12	
	3 xv, m.B., 125 - 150	18	
3 xv, m.B., 150 - 175	25		

Category	Size in cm	Approx. weight in kg/plant	Rootball-diameter in cm
Branched-trunk trees	2 xv, o.B., 80 - 100	0.6	
	2 xv, o.B., 100 - 125	0.8	
	2 xv, o.B., 125 - 150	1	
	2 xv, o.B., 150 - 200	1.5	
	2 xv, o.B., 200 - 250	2	
	3 xv, m.B., 80 - 100	8	
	3 xv, m.B., 100 - 125	9.5	
	3 xv, m.B., 125 - 150	11	
	3 xv, m.B., 150 - 175	14	
	3 xv, m.B., 175 - 200	18	
Streetworks and standards	3 xv, m.B., 12 - 14	50	40
	3 xv, m.B., 14 - 16	100	45
	3 xv, m.B., 16 - 18	150	50
	3 xv, m.B., 18 - 20	200	60
	4 xv, m.B., 20 - 25	270	70
	4 xv, m.B., 25 - 30	350	80
	5 xv, m.B., 30 - 35	500	95
	5 xv, m.B., 35 - 40	650	100
	5 xv, m.B., 40 - 45	850	125
	5 xv, m.B., 45 - 50	1100	130
	6 xv, m.B., 50 - 60	1600	140
	6 xv, m.B., 60 - 70	2500	160
6 xv, m.B., 70 - 80	4000	180	
6 xv, m.B., 80 - 90	5500	190	
6 xv, m.B., 90 - 100	7500	210	
6 xv, m.B., 100 - 120	9500	220	

57 Conversion table girth

Circumference / cm	Diameter / cm	Circumference / cm	Diameter / cm
7-8	2.25-2.5	35-40	12-14
8-10	2.5-3	40-45	14-16
10-12	3-4	45-50	16-18
12-14	4-4.5	50-60	18-20
14-16	4.5-5	60-70	20-22
16-18	5-5.5	70-80	22-25
18-20	5.5-6	80-90	25-28
20-25	6-8	90-100	28-32
25-30	8-10	100-120	32-36
30-35	10-12	120-140	36-40

