

Trees and shrubs for clay soil

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Planting trees and shrubs in heavy clay soil can be a backbreaking task that may end in disappointment if plants fail to thrive. Success depends on selecting plants that are tolerant of clay soils, then planting them properly.

The following lists feature trees and shrubs hardy to at least USDA zone 4; some are hardy further north. They should grow well in clay soils, providing special requirements such as soil pH are also met. Clay soils are usually alkaline with pH ranging from 7 to 8.5. Have the soil tested if you are considering plants with specific pH preferences, then select plants that will thrive in your soil conditions. Acidifying soil must be repeated annually and is not effective when tree roots spread beyond the treated area. The ideal pH range for plants that need acidic soil is 4.0 to 6.5.

Proper planting is critically important if you want healthy, vigorously growing trees and shrubs.

Dig a hole twice as wide as the rootball. If you're planting a tree or shrub with a main trunk, gently brush soil away from the stem to find the first root closest to the soil surface. Adjust the soil depth in the planting hole so the first root will be just below the soil surface when you refill the hole.

If the soil is particularly heavy, both trees and shrubs benefit from being planted so the top of the rootball is slightly higher than the adjacent ground. The optimum amount to raise the rootball depends on its depth. Add soil to the bottom of the planting hole so the plant's rootball, when positioned, will be raised above the adjacent soil level by one inch for every eight inches of rootball depth. Following are some examples:

Rootball depth	Amount to raise rootball
8 inches	1 inch
12 inches	1.5 inches
16 inches	2 inches
24 inches	3 inches

The next step is to fill the hole. If you wish, add compost, peat or composted woodchips to replace up to 1/3 of the original soil volume. Mix the organic matter thoroughly with the clay soil. Never replace all the original soil with black dirt, compost or sand, as distinctly different soils drain unevenly. For proper drainage, it is vital that the soil you use for backfill consists mostly of original soil.

Fertilizer may be incorporated into the backfill soil at planting time. Use a slow-release, balanced fertilizer, such as Osmocote 10-10-10, to prevent injury to the roots and provide nutrients over the entire growing season.

<http://www.extension.umn.edu/garden/yard-garden/trees-shrubs/trees-and-shrubs-for-clay-soil/>

Shrubs for clay soils

The plants listed below will grow in clay soils as long as any special site requirements are met.

Shrubs marked with an asterisk are particularly well-suited to clay soils.

§ When more than one zone is listed (eg: 3-4 or 4-5), some species are not hardy in the cooler zone

Scientific name	Common name	USDA zone	Comments
* <i>Elaeagnus angustifolia</i>	Russian olive	2	
* <i>Elaeagnus commutata</i>	Silverberry	2	
* <i>Physocarpus opulifolius</i>	Common ninebark	2	
* <i>Potentilla Fruticosa</i>	Potentilla	2	
* <i>Ribes alpinum</i>	Alpine currant	2	
* <i>Ribes odoratum</i>	Clove currant	2	
* <i>Salix</i> species	Willow	2	
* <i>Syringa</i> species	Lilac	2	
* <i>Viburnum lentago</i>	Nannyberry viburnum	2	
* <i>Viburnum trilobum</i>	Highbush cranberrybush	2	
<i>Rhus species</i>	Sumac	2	Prefers well-drained soils
<i>Rosa rugosa</i>	Rugosa rose	2	
* <i>Aronia melanocarpa</i>	Chokeberry	3	
* <i>Caragana arborescens</i>	Siberian peashrub	3	
* <i>Cornus alba</i>	Tatarian dogwood	3	
* <i>Cornus racemosa</i>	Grey dogwood	3	
* <i>Cornus sericea</i>	Red osier dogwood	3	
* <i>Forsythia</i> x 'Meadowlark'	'Meadowlark' forsythia	3	
* <i>Forsythia</i> x 'Northern Sun'	'Northern Sun' forsythia	3	
* <i>Symphoricarpos albus</i>	White snowberry	3	
* <i>Thuja occidentalis</i>	Arborvitae, white cedar	3	
* <i>Viburnum dentatum</i>	Arrowwood viburnum	3	Prefers well-drained soils
* <i>Viburnum opulus</i>	European cranberrybush	3	
<i>Diervilla lonicera</i>	Dwarf bush-honeysuckle	3	
<i>Euonymus alatus</i>	Burning bush	3	Needs well-drained soils
<i>Juniperus</i> species (most)	Juniper	3	Needs well-drained soils
<i>Sambucus canadensis</i>	American elderberry	3	
* <i>Cephalanthus occidentalis</i>	Buttonbush	4	
* <i>Rhamnus frangula</i>	Glossy buckthorn	4	
* <i>Viburnum sargentii</i>	Sargent viburnum	4	
<i>Amelanchier</i> species	Serviceberry	4	
<i>Berberis koreana</i>	Korean barberry	4	Avoid wet soils
<i>Berberis thunbergii</i>	Green barberry	4	Avoid wet soils
<i>Cornus alternifolia</i>	Pagoda dogwood	4	Needs moist, acidic soils
<i>Euonymus europaeus</i>	European euonymus	4	Needs well-drained soils
<i>Hamamelis virginiana</i>	Witch hazel	4	
<i>Ilex verticillata</i>	Winterberry	4	Needs acidic soils
<i>Sambucus pubens</i>	Scarlet elder	4	
* <i>Lonicera</i> species	Honeysuckle	3-4 §	
<i>Spiraea</i> species	Spirea	3-4 §	Needs well-drained soils

Trees for clay soils

The plants listed below will grow in clay soils as long as any special site requirements are met.

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§When more than one zone is listed (eg: 3-4 or 4-5), some species are not hardy in the cooler zone

Scientific name	Common name	USDA zone	Comments
* <i>Celtis occidentalis</i>	Common hackberry	2	
* <i>Larix laricina</i>	Tamarack	2	
* <i>Populus</i> species	Aspen, cottonwood	2	
* <i>Salix</i> species	Willow	2	Prefers moist to wet soils
* <i>Acer saccharinum</i>	Silver maple	3	
* <i>Fraxinus nigra</i>	Black ash	3	
* <i>Fraxinus pennsylvanica</i>	Green ash	3	
* <i>Malus</i> species	Apple, crabapple	3	Prefers acidic soils
* <i>Quercus macrocarpa</i>	Bur oak	3	Prefers limestone soils
* <i>Tilia</i> species	Linden, basswood	3	
<i>Abies balsamea</i>	Balsam fir	3	Prefers acidic soils
<i>Acer ginnala</i>	Amur or ginnala maple	3	Prefers acidic soils
<i>Acer negundo</i>	Boxelder	3	
<i>Acer rubrum</i>	Red maple	3	Needs acidic soils
<i>Fraxinus americana</i>	White ash	3	
<i>Pinus strobus</i>	White pine	3	Prefers acidic soils
<i>Pinus sylvestris</i>	Scots pine	3	Prefers acidic soils
* <i>Acer platanoides</i>	Norway maple	4	
* <i>Alnus glutinosa</i>	European alder	4	
* <i>Betula nigra</i>	River birch	4	Needs acidic soils
* <i>Carya cordiformis</i>	Bitternut hickory	4	Lighter clays
* <i>Carya ovata</i>	Shagbark hickory	4	
* <i>Gleditsia triacanthos</i>	Common honeylocust	4	
* <i>Gymnocladus dioica</i>	Kentucky coffeetree	4	
* <i>Juglans cinerea</i>	Butternut	4	Tolerates limestone soils, lighter clay
* <i>Larix decidua</i>	European larch	4	
* <i>Phellodendron amurense</i>	Amur corktree	4	
* <i>Quercus bicolor</i>	Swamp white oak	4	Needs acidic soils
* <i>Quercus palustris</i>	Eastern pin oak	4	Needs acidic soils
* <i>Ulmus</i> species	Elm	4	
<i>Abies concolor</i>	White fir	4	
<i>Acer freemanii</i>	Freeman maple	4	
<i>Carpinus caroliniana</i>	Blue beech	4	
<i>Ginkgo biloba</i>	Ginkgo	4	
<i>Juglans nigra</i>	Black walnut	4	Lighter clay
<i>Picea abies</i>	Norway spruce	4	
<i>Picea glauca</i> var. <i>densata</i>	Black Hills spruce	4	
<i>Pinus nigra</i>	Austrian pine	4	
<i>Pinus ponderosa</i>	Ponderosa pine	4	
<i>Syringa reticulata</i>	Japanese tree lilac	4	Needs well-drained soils
* <i>Crataegus</i> species	Hawthorn	3-4 §	Needs well-drained soils
* <i>Pyrus</i> species	Pear	4-5 §	

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Cold-tolerant plants for clay soils	Zone
Acer rubrum 'Northwood', A. saccharinum, A. tataricum, A.tataricum subsp. ginnala (maple)	3
Achillea (yarrow)	3
Aster alpinus, ericoides, macrophyllus and northern native asters	3
Baptisia australis (false indigo)	3
Campanula glomerata and C. punctata species and cultivars, C. takesimiana (avoid aggressive C. rapunculoides)	3
Cornus alba (redtwig dogwood)	2
C. stolonifera (red osier dogwood)	2
Eupatorium maculatum, E. purpureum species and cultivars (Joe Pye weed)	3
Filipendula rubra, F. vulgaris, F. hexapetala species and cultivars (meadowsweet)	3
Helenium hoopesii (sneezeweed)	3
Hemerocallis species and cultivars (daylily)	3
Iris setosa (Arctic iris)	3
I. sibirica (Siberian iris)	3
Larix laricina (tamarack, eastern, American or Alaska larch)	2
Leucanthemum hybrids (Shasta daisy) 'Alaska' is the hardiest at zone 2, many other good cultivars, 'Silver Princess', 'Aglaiia', 'Becky', 'Marconi' are zone 3. The fancier (more frilled and double) ones tend to be less hardy and need better soil.	2, 3
Liatris aspera, L. pycnostachys, L. spicata species and cultivars (blazing star, gayfeather)	4
Lupinus polyphyllus (lupine)	3
Quercus bicolor (swamp white oak)	4
Q. macrocarpa (bur oak)	3
Q. palustris (pin oak)	4
Persicaria bistorta 'Superba', P. affine 'Dimity', 'Darjeeling Red', other cultivars (fleeceflower, may also be sold as Polygonum)	3
Rudbeckia fulgida var. sullivantii 'Goldsturm', R. laciniata, R. maxima, R. triloba (coneflower)	3
Sanguisorba menziesii (Alaska burnet)	3
Solidago canadensis 'Baby Gold' (goldenrod)	4
Tilia cordata (littleleaf linden)	4
Trollius europaeus, T. chinensis, T. x cultorum (globeflower)	3

<http://www.bcliving.ca/garden/planting-in-clay-soil>

Barbara Rayment operates Birch Creek Nursery, in Prince George, where she grows and experiments with a wide variety of hardy plants.