

# *Fagus sylvatica*: European Beech<sup>1</sup>

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## Introduction

European Beech grows into a wide oval, 80 to 100 feet tall and spreads 50 to 70 feet. Branches normally sweep the ground in a graceful fashion. The tree grows slowly, is hard to transplant and prefers a sunny location and a moist, light soil. Though not a street tree, the tree makes one of the finest specimens of all those available in North America for large scale landscapes. European Beech is somewhat tolerant of heat and dry soil, but it is best to locate it where it would receive adequate moisture. The cultivars 'Pendula' and 'Fastigiata' are more available than the species and very attractive.

## General Information

**Scientific name:** *Fagus sylvatica*

**Pronunciation:** FAY-gus sill-VAT-ih-kuh

**Common name(s):** European Beech

**Family:** *Fagaceae*

**USDA hardiness zones:** 4A through 7B (Fig. 2)

**Origin:** not native to North America

**Invasive potential:** little invasive potential

**Uses:** hedge; specimen; shade

**Availability:** somewhat available, may have to go out of the region to find the tree

## Description

**Height:** 50 to 75 feet

**Spread:** 40 to 60 feet

**Crown uniformity:** symmetrical

**Crown shape:** oval



Figure 1. Young *Fagus sylvatica*: European Beech

**Crown density:** dense

**Growth rate:** moderate

**Texture:** medium

## Foliage

**Leaf arrangement:** alternate (Fig. 3)

**Leaf type:** simple

**Leaf margin:** undulate, entire

**Leaf shape:** ovate, elliptic (oval)

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Figure 2. Range

**Leaf venation:** pinnate  
**Leaf type and persistence:** deciduous  
**Leaf blade length:** 2 to 4 inches  
**Leaf color:** green  
**Fall color:** copper  
**Fall characteristic:** showy

### Flower

**Flower color:** unknown  
**Flower characteristics:** not showy

### Fruit

**Fruit shape:** oval  
**Fruit length:** .5 to 1 inch  
**Fruit covering:** dry or hard  
**Fruit color:** brown  
**Fruit characteristics:** attracts birds; not showy; fruit/leaves not a litter problem

### Trunk and Branches

**Trunk/bark/branches:** branches droop; very showy; typically one trunk; thorns  
**Pruning requirement:** little required  
**Breakage:** resistant  
**Current year twig color:** brown, gray  
**Current year twig thickness:** thin  
**Wood specific gravity:** unknown

### Culture

**Light requirement:** full sun, partial sun or partial shade  
**Soil tolerances:** clay; sand; loam; acidic; slightly alkaline; well-drained  
**Drought tolerance:** moderate  
**Aerosol salt tolerance:** low

### Other

**Roots:** can form large surface roots  
**Winter interest:** yes  
**Outstanding tree:** no

**Ozone sensitivity:** tolerant  
**Verticillium wilt susceptibility:** resistant  
**Pest resistance:** resistant to pests/diseases



Figure 3. Foliage

## Use and Management

European Beech has given rise to many cultivars: 'Albo-variegata' - leaves margined white; 'Asplenifolia' - cut leaves; 'Atropunica' - leaves purple; 'Cochleata' - smaller, spoon-shaped leaves; 'Cuprea' - leaves copper colored; 'Dawycki' - upright growth habit; 'Fastigiata' - upright growth habit; 'Laciniata' - leaves cut, wider more regularly-shaped than 'Asplenifolia'; 'Macrophylla' - larger leaves; 'Miltonensis' - leader erect, main branches horizontal, side branches pendulous; 'Pendula' - weeping habit; 'Purpurea Pendula' - weeping with purple leaves; 'Quercifolia' - slow growing, leaves oak-like; 'Riversii' - young foliage reddish then purple; 'Rohanii' - similar to 'Laciniata'; 'Roseo-marginata' - purple leaves with light pink border, grow in shade to prevent leaf burn, not easily grown; 'Rotundifolia' - leaves round; 'Spaethiana' - leaves purple; 'Tortuosa' - low, spreading, umbrella-like; 'Tricolor' - leaves green and white with pink margins; 'Zlatia' - leaves golden in spring.

## Pests

Usually none are serious. Aphid colonies on the lower branches can be dislodged with a strong stream of water from the garden hose. Colonies are often disposed of by predatory insects.

Borers such as flat-headed appletree borer or two-lined chestnut borer bore into trees weakened by some stress. Prevent the insect infestations by keeping trees healthy with regular fertilization and irrigation in dry weather.

Regular inspections of the trunk and branches are suggested for early detection of scales. Horticultural oil sprays will help control scales.

Certain caterpillars can be controlled with sprays of *Bacillus thuringiensis*.

## Diseases

Usually none are serious provided soil is loose and is well-drained.

Several fungi cause leaf spots but are generally not serious to warrant chemical control.

Powdery mildew causes a white coating on the leaves. The disease is most common late in the season.

Bleeding canker forms cankers from which a brownish liquid oozes. Crown symptoms include leaves of smaller size and lighter green color than normal. In severe cases the leaves wilt and the branches die. Avoid feeding with high nitrogen fertilizers as it seems to worsen the condition of infected trees.

Beech bark disease occurs when the feeding site of woolly Beech scale is invaded by a fungus. The fungus kills the bark and in the process, the insects. There are no satisfactory controls for the fungus. Control the disease by controlling the scale with a horticultural oil.

Cankers infect, girdle, and kill branches. Prune out the infected branches.

During periods of high temperatures and low rainfall Beech leaves may scorch. Make sure trees are adequately watered.