



Fagus grandifolia American Beech¹

Edward F. Gilman and Dennis G. Watson²

INTRODUCTION

This massive tree will slowly reach a height and spread of 50 or more feet (Fig. 1). Forest grown trees reach up to 120 feet. The tree is naturally low-branched with attractive glossy green leaves providing deep, inviting shade. Little grows in the dense shade of a Beech tree but if low branches are left on the tree no ground cover or grass is needed. In the fall, the leaves turn bronze but weather to a light tan color. Some leaves are held late into the winter if not blown off by the wind and the thin, smooth, silvery-gray bark is quite ornamental. The bark looks like elephant skin on older specimens. The four tiny nuts in each spiny bur of this American native are much prized by birds and various mammals, including man. The wood is almost white and is used most often in toys, cookware, furniture and for barrels which age beer. The tree is very resistant to decay under water so it was used to make water wheels in Colonial times. The wood is also used for tool handles, chairs, cuttings boards, and for making charcoal.

GENERAL INFORMATION

Scientific name: *Fagus grandifolia*

Pronunciation: FAY-gus gran-dih-FOLE-ee-uh

Common name(s): American Beech

Family: *Fagaceae*

USDA hardiness zones: 3 through 8 (Fig. 2)

Origin: native to North America

Uses: hedge; shade tree; specimen; no proven urban tolerance

Availability: generally available in many areas within its hardiness range

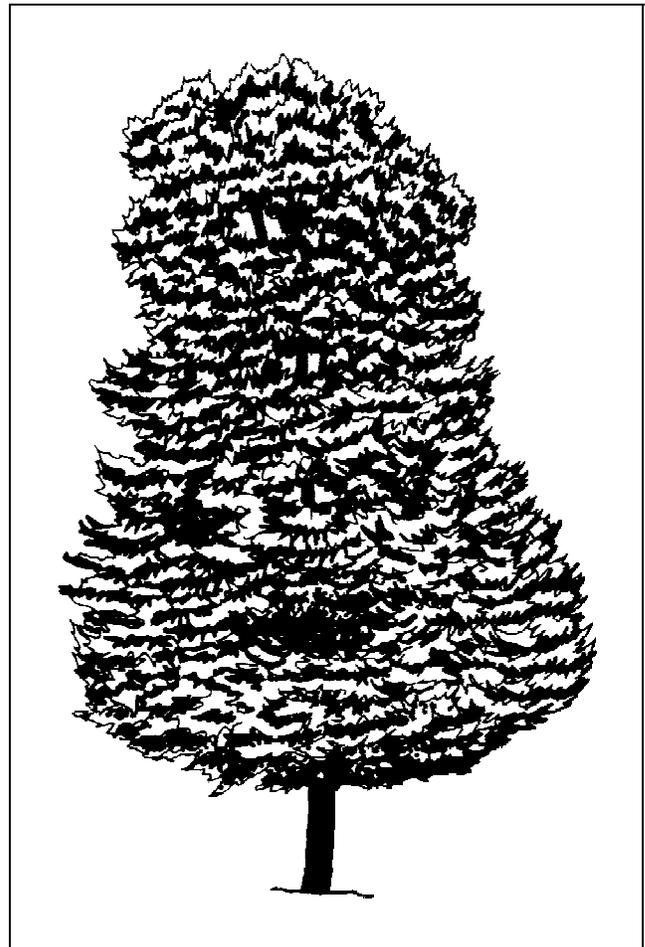


Figure 1. Middle-aged American Beech.

1. This document is adapted from Fact Sheet ST-243, a series of the Environmental Horticulture Department, Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida. Publication date: November 1993.
2. Edward F. Gilman, associate professor, Environmental Horticulture Department; Dennis G. Watson, associate professor, Agricultural Engineering Department, Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida, Gainesville FL 32611.



Figure 2. Shaded area represents potential planting range.

DESCRIPTION

Height: 50 to 75 feet
Spread: 40 to 60 feet
Crown uniformity: symmetrical canopy with a regular (or smooth) outline, and individuals have more or less identical crown forms
Crown shape: oval; pyramidal
Crown density: dense
Growth rate: medium
Texture: medium

Foliage

Leaf arrangement: alternate (Fig. 3)
Leaf type: simple
Leaf margin: serrate
Leaf shape: oblong; ovate
Leaf venation: pinnate
Leaf type and persistence: deciduous
Leaf blade length: 2 to 4 inches
Leaf color: green
Fall color: copper; yellow
Fall characteristic: showy

Flower

Flower characteristics: inconspicuous and not showy; spring flowering

Fruit

Fruit shape: oval
Fruit length: .5 to 1 inch
Fruit covering: dry or hard
Fruit color: brown
Fruit characteristics: attracts birds; attracts squirrels and other mammals; suited for human consumption; inconspicuous and not showy; no significant litter problem

Trunk and Branches

Trunk/bark/branches: droop as the tree grows, and will require pruning for vehicular or pedestrian clearance beneath the canopy; should be grown with a single leader; very showy trunk; no thorns
Pruning requirement: needs little pruning to develop a strong structure
Breakage: resistant
Current year twig color: brown; gray

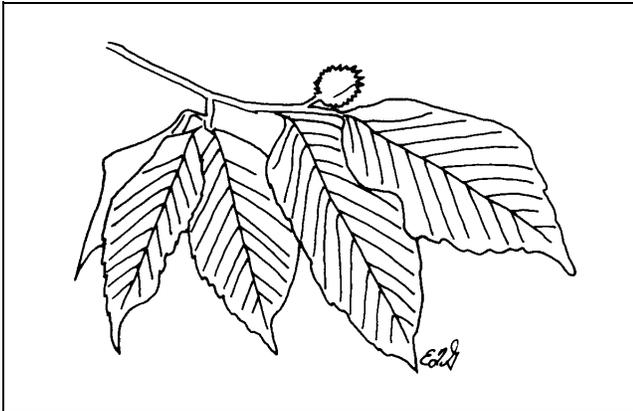


Figure 3. Foliage of American Beech.

Current year twig thickness: thin

Wood specific gravity: 0.64

Culture

Light requirement: tree grows in part shade/part sun;
tree grows in the shade; tree grows in full sun

Soil tolerances: clay; loam; sand; acidic;
well-drained

Drought tolerance: moderate

Aerosol salt tolerance: low

Soil salt tolerance: poor

Other

Roots: surface roots can lift sidewalks or interfere
with mowing

Winter interest: tree has winter interest due to
unusual form, nice persistent fruits, showy winter
trunk, or winter flowers

Outstanding tree: not particularly outstanding

Invasive potential: little, if any, potential at this time

Ozone sensitivity: tolerant

Verticillium wilt susceptibility: not known to be
susceptible

Pest resistance: long-term health usually not
affected by pests

USE AND MANAGEMENT

Branch structure is typically very good, with one central trunk growing straight up through the crown of the tree. Many branches are often horizontally oriented, small in diameter, and well secured to the trunk.

American Beech needs a loose, acid soil which is well-drained yet can retain enough moisture for its shallow root system. The root zone should be free of

compaction and grass competition. Not a good street or parking lot tree due to its need for good soil and low-branching, horizontal habit. Plant it on large estates along entry drives to large commercial properties or as a specimen in a park or campus setting. Young trees collected from the woods are difficult to transplant and are best simply preserved where they naturally occur, or should be planted from nursery-bought stock. Insect and disease problems are usually not very serious, but this is not an urban-tough, downtown type of tree. Give it plenty of above-ground and below-ground rooting space. It is not suited for dry climates.

Pests

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 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. Beech scale can be devastating to trees in the northeastern United States.

Certain caterpillars can be controlled with sprays of *Bacillus thuringiensis*. Insect identification allows proper spray recommendations to be made.

Diseases

Usually none are serious provided soil is not compacted 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 occasionally kill branches. Prune out the infected branches.

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