

Plant Profiles: HORT 2242 Landscape Plants II

Botanical Name: *Carpinus betulus*

Common Name: European hornbeam, common hornbeam

Family Name: Betulaceae – birch family

General Description: *Carpinus betulus* is an intermediate to large tree with exceedingly strong, heavy wood that Europeans once used for a variety of purposes. Its densely branched, broad pyramidal habit lends a formality to the landscape. It is native to Asia and Europe where it is frequently pruned into formal hedges. In the ornamental landscape European hornbeam grows best in full sun or part shade in average, well-drained soils. In the Chicago area it is typically used on large-scale sites; however, with proper selection, there is an abundance of cultivars that could easily be used in the residential landscape. In fact, the straight species is rarely used, with *Carpinus betulus* 'Fastigiata' the most popular and frequently used selection.

Zone: (4)5 - 7

Resources Consulted:

Dirr, Michael A. *Manual of Woody Landscape Plants: Their Identification, Ornamental Characteristics, Culture, Propagation and Uses*. Champaign: Stipes, 2009. Print.

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Creation Date: 2014

Keywords/Tags: Betulaceae, *Carpinus betulus*, European hornbeam, common hornbeam, deciduous, tree



Whole plant/Habit:

- Description: *Carpinus betulus* has a densely branched, broad pyramidal habit. It is common for it to branch very low on the trunk.
- Image Source: Karren Wcisel, TreeTopics.com
- Image Date: October 14, 2008
- Image File Name: european_hornbeam_0755.png



Whole plant/Habit:

- Description: The low branching, dense habit and tolerance to heavy pruning make it an ideal plant for a formal hedge.
- Image Source: Karren Wcisel, TreeTopics.com
- Image Date: July 29, 2012
- Image File Name: european_hornbeam_2866.png



Bark:

- Description: The bark is smooth and gray, with a sinewy muscle-like texture. Notice the fluted (rounded lengthwise ridges) trunk. These bark features are common to both *Carpinus betulus* and *Carpinus caroliniana*.
- Image Source: Karren Wcisel, TreeTopics.com
- Image Date: April 13, 2004
- Image File Name: european_hornbeam_2776.png



Branch/Twig:

- Description: The larger branches have the same muscle-like smooth gray bark as the trunk.
- Image Source: Karren Wcisel, TreeTopics.com
- Image Date: April 2, 2004
- Image File Name: european_hornbeam_2269.png



Branch/Twig:

- Description: The small twigs of European hornbeam have prominent lenticels and are olive-brown to reddish-brown in color. The larger branches are the same gray color and smooth, sinewy texture of the bark.
- Image Source: Karren Wcisel, TreeTopics.com
- Image Date: April 3, 2012
- Image File Name: european_hornbeam_2778s.png



Bud:

- Description: The buds of *Carpinus betulus* are alternate with no true terminal bud. They are reddish-brown and imbricate with pubescence on the scale tips. The buds are angled and hug the stem or curve onto the stem. Compare this to the similar but divergent buds of American hornbeam.
- Image Source: Karren Wcisel, TreeTopics.com
- Image Date: October 14, 2008
- Image File Name: european_hornbeam_0754.png



Flower:

- Description: *Carpinus betulus* is monoecious. It produces separate male and female flowers, called catkins, on the same plant. The catkins are not present during the dormant season but become evident when they emerge from buds in spring. The female flowers are not showy; however, the male flowers can be attractive in bloom. This image shows the male catkins beginning to bloom and elongate in early spring.
- Image Source: Karren Wcisel, TreeTopics.com
- Image Date: April 3, 2012
- Image File Name: european_hornbeam_1350762.png



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Flower/Fruit:

- Description: The fruit clusters are distinctive and provide an excellent tool to identify the genus *Carpinus*. The nutlets of *Carpinus betulus* are subtended by a 3-parted bract with the middle lobe the longest. The bracts are produced in pairs and face each other. They are very similar to the fruits of *Carpinus caroliniana* with slight differences in bract features and size. The clusters change in color from green to yellow to brown as they mature.
- Image Source: Piero Amorati, ICCroce-Casalecchio di Reno, Bugwood.org
- Image Date: Unknown
- Image File Name: 5026029-SMPT.jpg



Karren Wcisel © 2012

Flower/Fruit:

- Description: The thin, zig-zag structures at the tip of the stems in this image are the remnants of the peduncle that held last year's female flowers and nutlets. After the nutlets mature and fall off or are eaten by wildlife, the peduncle remains on the twig and can serve as a clue to the genus *Carpinus*.
- Image Source: Karren Wcisel, TreeTopics.com
- Image Date: April 3, 2012
- Image File Name: european_hornbeam_1350749.png



Karren Wcisel © 2012

Leaf:

- Description: The simple leaves are alternate with a deeply impressed pinnate vein pattern. Fall color is yellow. The leaves of *Carpinus betulus* are thicker and the veins more prominent than on *Carpinus caroliniana*.
- Image Source: Karren Wcisel, TreeTopics.com
- Image Date: April 3, 2012
- Image File Name: european_hornbeam_1350815.png

**Winter interest:**

- Description: The dense formal habit and subtle ornamental bark creates a distinctive winter silhouette.
- Image Source: Karren Wcisel, TreeTopics.com
- Image Date: March 7, 2014
- Image File Name: european_hornbeam_4579.png

**Special ID feature(s):**

- Description: The angled buds that hug or curve onto the stem will be the best feature to use to identify *Carpinus betulus*.
- Image Source: Karren Wcisel, TreeTopics.com
- Image Date: October 14, 2008
- Image File Name: european_hornbeam_0754.png