



Carpinus caroliniana **American Hornbeam**

Family: Betulaceae

The genus *Carpinus* is represented by about 30 species that grow in the New World [1] and Eurasia [30]. *Carpinus* is the classical Latin name.

Carpinus betulus: **European Hornbeam**—Avenbok, Carpe, Carpe Blanco, Carpen, Carpino Biannco, Charme, Charme Commun, Charme Comun, Charrlle, Charrlle Commun, Common Hornbeam, Dyed Hornbeam, Gemeine-weib-buche, Gem Weissbuche, Gewone Haagbeuk, Grab, Gyertyan, Haagbeuk, Habr Obecnny, Hagabuche, Hage-buche, Hain-buche, Hojaranzo, Hornbaum, Hornbeam, Horn-buche, Steinbuch, Vitavenbok, Vit-bok, Weissbuche, Witch Elm

Carpinus caroliniana: **American Hornbeam**—Blue Beech, Broomwood, Hophornbeam, Ironwood, Musclemwood, O-tan-tahr-te-weh, Smoothbark Ironwood, Water Beech

Carpinus carpinoides: Hornbeam, Kuma-shide

Carpinus caucasia: Caucasian Hornbeam

Carpinus cordata: Ggachibagdal, Russian Hornbeam, Sawashiba

Carpinus distegocarpus: Kuma-shide

Carpinus hebestroma: Taroko-sidi

Carpinus japonica: Kuma-shide, Soya

Carpinus laxiflora: Aka-shide, Hornbeam, Seo-namu, Soro Shide

Carpinus orientalis: **Oriental Hornbeam**—Carpinella, Charme d’Orient, Eastern Hornbeam, Hojaranzo, Oosterse Haagbeuk, Orientalisk Avenbok

Carpinus polyneura: Chinese Hornbeam

Carpinus pubescens: Giau Do

Carpinus rankanensis: Rankan-side

Carpinus schuschaensis: Iran Hornbeam

Carpinus seki: Taiwan-akashide

Carpinus tschonoskii: Gaeseo-namu, Inu-shide, Korean Hornbeam

Distribution

North America, from central Maine to southern Quebec, southern Ontario, northern Iowa, Missouri, eastern Oklahoma and eastern Texas, east to central Florida. Northeastern Mexico (Tamaulipas) and from southern Mexico to Guatemala and Honduras.

The Tree

The American Hornbeam is a small tree that grows in mixed deciduous forests in the shade of taller hardwoods in bottom lands and river margins. It grows in association with oaks, sweetgum, hickories, maple and basswood. The tree grows slowly and is short lived. It masts every 3 to 5 years, producing large amounts of seed. Imperfect flowers are produced on separate catkins on the same tree.

The Wood

General

The tree’s name (horn=tough and beam~baum=tree) describes the wood, which is tough, hard and heavy. Colonial settlers in America used it for bowls and dishes because it rarely split or cracked. Hornbeam has a

thick, nearly white sapwood and a heartwood which is pale yellow to tan. It has no characteristic odor or taste. The wood is heavy and hard.

Mechanical Properties (2-inch standard)

	Specific gravity	MOE MPa (10 ⁹ Pa)	MOR kPa (10 ⁶ Pa)	Compression		WML* kJ/m ³	Hardness N	Shear kPa (10 ⁶ Pa)
				Parallel kPa (10 ⁶ Pa)	Perpendicular kPa (10 ⁶ Pa)			
Green	0.58	6,826	46,886	18,410	5,033	131	4,181	7,998
Dry	0.70	7,447	84,119	39,164	13,790	255	7,917	16,616

Reference (4).

*WML = Work to maximum load.

Drying and Shrinkage

Hornbeam checks and warps badly in seasoning

Shrinkage (% of green)	Green, 0% MC	Green, 6% MC	Green, 12% MC*
Tangential	11.4 (4)	–	7 (2)
Radial	5.7 (4)	–	5 (2)
Volumetric	19.1 (4)	–	–

*This column is for *C. betulus*.

Kiln Drying Schedule: British Schedule E (2).

Working Properties: Difficult to work.

Durability: Nonresistant to heartwood decay.

Preservation: No information available at this time.

Uses: Tool handles, levers, parts for farm machinery, fuel wood.

Toxicity: Wood is said to have irritant effects (5).

Additional Reading and References Cited (in parentheses)

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