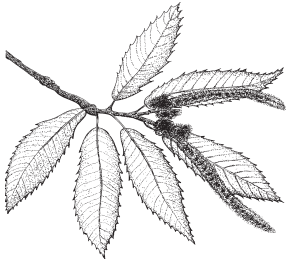




## American chestnut

Yvonne C. Barkley



Once abundant from Maine to Michigan and south to Georgia and Alabama, mature American chestnuts (*Castanea dentata*) are but a memory in the forests of the eastern United States. Introduced from China in the early

1900's, chestnut blight brought this species to the verge of extinction. American chestnut was once one of the most abundant of the North American hardwoods. Highly valued for its wood, which is very durable and virtually decay resistant, American chestnut was once used from the cradle to the grave to build anything meant to last - furniture, shingles, siding, fence rails and posts, railroad ties, and caskets. Aside from the versatile and valuable wood, both man and animal alike were dependent on the American chestnut's abundant annual nut crops.

And though its numbers are vastly diminished in the great hardwood forests of the east, many people are striving to bring the American chestnut back. Research programs are working with American and Chinese chestnut crosses to increase natural resistance to the blight and there is a continuing search for native trees with natural resistance. Amazingly enough, many areas of the west, including Idaho, remain blight free.

### Biology and Silvics

American chestnut is a stately tree reaching heights of up to 100 feet with a broad, open crown. Native to the mixed hardwood forests of the eastern United States, this species is intermediate in shade tolerance, deeply taprooted, and long-lived. In its native range, American chestnut was commonly found on mountains, hills, and slopes in gravelly or rocky well-drained glacial soils. Established trees are quite drought tolerant. Though mature trees are virtually extinct in its

native range, this species is a prolific stump sprouter and continues to send up shoots from stumps that died long ago. Sprouts are carefully tested for natural resistance to chestnut blight, with little success so far.

American chestnut's impressive show of creamy-white flowers appear in early summer, long after the deep green, glossy leaves have emerged. Copious amounts of highly nutritious nuts are produced each fall and are covered with an outer burr of sharp, branched spines. Trees can begin to bear nuts at age four and have good seed crops each year. Chestnuts are pollinated by wind and insects.

### Establishment

*Site selection.* Areas with potentially suitable climate characteristics for American chestnut production are plentiful throughout the west. Thirty year old experimental sites located north of the 45<sup>th</sup> parallel in Michigan have produced nut crops for the past 25 years and trees appear to be well suited to the cold-winter climate found there.

American chestnuts will do best on sites with deep, well-drained soils with pH values between 5.5 to 6.5. Somewhat susceptible to late spring frosts, American chestnuts should be planted on the upper portions of sloping land. American chestnuts do not like "wet-feet" and low spots and limestone or clay-based soils should be avoided, as should frost pockets and cold air drainages. Chestnuts will grow best in loam to sandy loam soils.

*Planting densities.* Chestnuts are monoecious (have separate male and female flowers on the same tree) but are not self-fertile. At least two trees are necessary to make nuts and these trees should be no more than 100' apart for effective pollination. Chestnut planta-

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tions are traditionally established at 20 by 20 foot spacings, with a thinning to 40 by 40 foot spacing planned for the future (at about age 25).

**Planting stock.** It is very important that you purchase your American chestnut seedlings from blight-free areas. Chestnut blight is present in all of the American chestnut's native range. Currently there is no quarantine in place to restrict the sale of chestnut from blighted areas to Idaho. The UI Forest Research Nursery, as well as other growers in the Pacific Northwest, offer guaranteed blight-free planting stock.

### Culture and Management

**Protection.** A fence will be your best protection against animal depredation. Small tree shelters (two feet) offer good first season protection against small animals, weeds, drought, and mower and/or chemical damage. Larger tree shelters are not recommended for American chestnut because its large leaves quickly crowd the shelter and result in spindly trees. If fencing is not possible, surround each tree with staked wire cages four feet in diameter and five to six feet tall.

**Irrigation.** Most commercial chestnut growers irrigate during dry spells, giving each seedling the equivalent one gallon of water per week.

**Harvest, post-harvest.** Nuts from this species, though small, have excellent flavor. For best quality, chestnuts should be harvested every two days during the 12 to 15 day nut drop in October. Chestnuts fall to the ground when ripe and will deteriorate rapidly once they have fallen. They are also readily eaten by local wildlife. Harvesting is done by hand and burrs are removed mechanically. Fresh nuts should be stored promptly at temperatures between 32 to 35°F to preserve freshness. Nuts can be easily dried at 120°F for seven to eight days, peeled, and stored for several months. Dried nuts are often rehydrated for culinary uses and can also be frozen or candied.

Once the king of the eastern forest, American chestnut is but a memory to many. Renewed interest in this

species coupled with suitable blight-free areas in the west could bring back this species from the brink of extinction. High-value timber and abundant nut crops for both human and animal consumption, as well as its many pleasing aesthetic characteristics, makes American chestnut an ideal alternative tree crop for many areas of Idaho.

#### *At a glance ...*

**Species:** *Castanea dentata*

**Common names:** American chestnut.

**Native range:** eastern United States into the Appalachian Mountains.

**Hardiness:** USDA Zone 4-8.

**Soil type:** grows in variety of soils except in wet, poorly drained types.

**Shade tolerance:** intermediate to intolerant.

**Form:** fast-growing, large tree.

**Regional insect & disease problems:** none of concern.

**Objectional characteristics:** none.

**Other:** chestnut split rail fences can still be found throughout the eastern United States, due to the extreme decay resistance of wood.

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