USDA NRCS
United States Department of Agriculture
Natural Resources Conservation Service

Planting Guide

CHINKAPIN
Castanea pumila (L.) P. Mill.
Plant Symbol = CAPU9

Contributed by: USDA NRCS National Plant Data Center

Male flowers. A.B. Russell. 1997.
NC State University.
Trees of the Maritime Forest.

Female flowers. G. Nelson. 1996.
Shrubs and woody vines of Florida.

Alternate Names
Allegheny chinkapin, American chinquapin, *Castanea alnifolia*, *Castanea ashei*, *Castanea floridana*, *Castanea margaretta*, *Castanea nana*, *Castanea paucispina*, chinquapin, dwarf chestnut, *Fagus pumila*, golden chinquapin.

Uses
Economic: Chinkapin nuts and wood are sold commercially. The wood is light, hard, close-grained, and strong. It is used for fence posts and fuel although it is not timbered because of its small stature and scattered occurrence.

Ethnobotanic: The Cherokee Indians used dried leaves as washes to alleviate headaches, fevers, chills, cold sweats, and fever blisters. The Koasati Indians used the roots of chinkapin in boiled extracts to treat stomachaches.

Food source: Chinkapin nuts are palatable to humans as well as wildlife. They have a sweet flavor and are often preferred over the fruit of the American chestnut.

Landscaping: Chinkapin is sometimes used for landscaping as a small ornamental tree or shrub. Its flowers are attractive but have an unpleasant odor.

Restoration: Chinkapin can be used to rehabilitate disturbed sites because of its ability to adapt to harsh conditions. The threat of chestnut blight often deters this decision by land managers.

Wildlife: Squirrels, chipmunks, opossums, white-tailed deer, blue jays, woodpeckers and other birds consume chinkapin nuts. White-tailed deer browse the foliage.

Legal Status
Chinkapin is rare in its range. It is threatened in Kentucky, endangered in New Jersey, and has been extirpated from most of Alabama by chestnut blight. Please consult the PLANTS Web site and your State Department of Natural Resources for this plant's current status (e.g. threatened or endangered species, state noxious status, and wetland indicator values).

Description
General: Beech Family (Fagaceae). Chinkapin is a monoecious small tree or large shrub that grows to be 2 to 5 m tall. The twigs are densely hairy (tomentose) when young, becoming shiny brown with densely reddish-hairy buds. The leaves are alternate, simple, short-stemmed, prominently veined, oblong with fine pointed teeth or bristles, up to 15 cm long, and tomentose on the lower surface. Male flowers are borne in the leaf axils, elongated, yellow to white, clustered, and have a strong odor. Female flowers are rounder with a diameter up to 3 cm. The fruit is a spiny bur that houses a single nut. Male flowers appear in May and June, female flowers later in the season. Fruits mature in autumn and winter.

Distribution: Chinkapin is native to the eastern and southern United States. Its native range is from New Jersey and West Virginia, west to Missouri and Oklahoma, and south to Texas and Florida. It has been planted in Wisconsin and Michigan where it has become a forest tree. For current distribution, please

consult the Plant Profile page for this species on the PLANTS Web site (http://plants.usda.gov).

Habitat: Chinkapin occurs in mixed hardwood forests among pine and oak trees on high ridges and slopes that are free from limestone. It grows on black sandy dunes in the Carolinas, but not on frontal dunes. It is also found on well-drained stream terraces, dry pinelands, and disturbed sites such as railroad rights-of-way, power line clearings, fence and hedgerows, pine plantations, and old fields.

Adaptation
Chinkapin occurs in the USDA plant hardiness zones 6 to 10. Chinkapin grows in droughty and well-drained sites on dry, rocky, sandy, or loamy soils. It ranges in elevation from sea level to about 4,450 feet. It occurs in open areas and is tolerant of high heat. It is tolerant of acid soils (pH 5.5-6.0), but is not tolerant of coastal salt spray or shade.

Pests and Potential Problems
Chinkapin is moderately resistant to chestnut blight, but fewer trees are reported each year due to the inhibitory effects of the fungus.

Seeds and Plant Production
Chinkapin plants and seeds are not commonly produced commercially. It reproduces readily from seed. Collect seeds immediately after the spiny husks have split open to expose the nut. Seeds that are planted in the fall show good germination (>90%) while seeds stored over winter dry out and germinate at reduced rates (<50%). Seedlings will produce nuts in the third growing season, with large nut crops occurring during the fifth and sixth season. Chinkapin also sprouts from rhizomes, forming dense colonies.

Field Establishment
Chinkapin plants can be established from bareroot or containerized plants. The best survival and growth is achieved by planting while the plants are dormant between the date of first frost in the fall and the date of last frost in the spring. Containerized plants established after the last frost in the spring will survive if they are irrigated. Plantings for wildlife habitat improvement or forest restoration should be established at a spacing of ten feet between plants and rows. Plantings for seed orchards or wildlife habitat improvement where seed production is a primary goal should be established at a spacing of fifteen to twenty feet.

Dipping bareroot plants in root gel before planting to retain moisture around the roots will enhance survival and growth. Applying a slow release fertilizer in the planting hole will also enhance survival and early growth.

Low maintenance cover crops may be used in seed orchards to provide manageable soil protection. Species such as creeping red fescue, chewing fescue, hard fescue, sheep fescue, creeping bentgrass, redtop, and weeping lovegrass are low maintenance cover crops. Species such as tall fescue, orchardgrass and perennial ryegrass require extensive fertilization and/or mowing to maintain a good cover and are not low maintenance cover crops for seed orchards.

Management
Chinkapin plants form extensive clones where it has been burned annually. It resprouts vigorously following top-kill by fire. It will also regenerate upon overstory removal in stands where it had once been out-competed by canopy trees.

Seed orchards should be fenced to minimize browsing by livestock and deer. Root collars may be necessary if girdling of woody plants by rabbits is a problem. Seed orchards should be mowed to minimize competition from other plants. Tillage between plants and rows will enhance growth and seed production, but a conservation plan should be developed to address the orchard site's erosion potential. Discing on the contour between rows may be a viable alternative to tilling the entire orchard. Low maintenance cover crops used in seed orchards should be maintained as the species requires..

Chinkapin is not resistant to herbicides that control broadleaf weeds such as 2,4-D, bromacil, dicamba, picloram, and silvex. It may resprout following herbicide treatments. Trade names and control measures appear in this document only to provide specific information. USDA-NRCS does not guarantee or warrant the products and control methods named, and other products may be equally effective.

Cultivars, Improved, and Selected Materials (and area of origin)
The NRCS Plant Materials Program has released two cultivars for their wildlife value and adaptability to harsh sites. 'Golden' was originally collected in Towns County, Georgia and was released by the Quicksand, Kentucky Plant Materials Center in 1983.

The Quicksand, Kentucky Plant Materials Center has relocated to Alderson, West Virginia and is now known as the Appalachian Plant Materials Center. Foundation plants to establish new seed orchards for commercial production are available from the Appalachian Plant Materials Center in Alderson, West Virginia.

'Copper' was released by the Big Flats, New York Plant Materials Center in 2005. It is the progeny of three collections from southern Virginia and southern West Virginia. Foundation plants are available from the Big Flats, New York Plant Materials Center.

At least two horticultural varieties, 'Fuller' and 'Rush' have been developed as nut crops. Chinkapin cultivars may be of value for breeding blight-resistant trees with flavorful nuts.

Contact your local Natural Resources Conservation Service (formerly Soil Conservation Service) office for more information. Look in the phone book under "United States Government." The Natural Resources Conservation Service will be listed under the subheading "Department of Agriculture."

References

Agricultural Research Center. 2004. *GRIN taxonomy* (http://www.ars-grin.gov/cgi-bin/npgs/html/index, 9 May 2004). USDA, Beltsville.

American Chestnut Growers Foundation. 2004. *Genus Castanea* (http://www.ppws.vt.edu/griffin/accfcast.html, 9 May 2004). Department of Plant Pathology, Physiology and Weed Science, Virginia Tech, Blacksburg.

Anagnostakis, S.L. 2004. *Identification of American chestnut trees* (http://www.caes.state.ct.us/FactSheetFiles/PlantPathology/fspp034f.htm, 9 May 2004). The Connecticut Agricultural Experiment Station, New Haven.

Finical, L. 2004. *Texas native trees* (http://aggie-horticulture.tamu.edu/ornamentals/natives/about.html 9 May 2004). Dallas Arboretum, Texas Agricultural Experiment Station, Dallas.

Hamel, Paul B. and M.U. Chiltoskey. 1975. *Cherokee plants and their uses—a 400 year history.* Herald Publishing, Sylva.

Johnson, F.L. and B.W. Hoagland. *Catalog of the woody plants of Oklahoma* (http://www.biosurvey.ou.edu/shrub/cover.htm, 9 May 2004). Oklahoma University, Norman.

Nelson, G. 1996. *Shrubs and woody vines of Florida.* Pineapple Press Co., Sarasota.

Russell, A.B. 1997. *Trees of the Maritime forest* (http://www.ces.ncsu.edu/depts/hort/consumer/factsheets/maritime/Castapu.htm, 9 May 2004). Department of Horticultural Science, North Carolina State University, Raleigh.

Sullivan, J. 1994. *Castanea pumila.* (http://www.fs.fed.us/database/feis/, 9 May 2004). Fire Sciences Laboratory, Rocky Mountain Research Station, USDA Forest Service, Missoula.

Taylor, L.A. 1940. *Plants used as curatives by certain southeastern tribes.* Botanical Museum of Harvard University, Cambridge.

Wunderlin, R.P., and B.F. Hansen. 2003. *Atlas of Florida vascular plants* (http://www.plantatlas.usf.edu, 9 May 2004). Institute of Systematic Botany, University of South Florida, Tampa.

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For more information about this and other plants, please contact your local NRCS field office or Conservation District, and visit the PLANTS Web site<http://plants.usda.gov> or the Plant Materials Program Web site <http://Plant-Materials.nrcs.usda.gov>