

COMMON HACKBERRY

Celtis occidentalis L.
Plant Symbol = CEOC

Contributed by: USDA NRCS National Plant Data Center



E.W. Chester. 2004
University of Tennessee Herbarium

Alternate Names

American hackberry, beaverwood, *Celtis canina*, *Celtis occidentalis* ssp. *tenuifolia*, *Celtis occidentalis* var. *crassifolia*, *Celtis occidentalis* var. *georgiana*, *Celtis occidentalis* var. *integrifolia*, *Celtis occidentalis* var. *pumila*, *Celtis pumila*, *Celtis pumila* var. *georgiana*, *Celtis tenuifolia*, false elm, hackberry, nettle tree, northern hackberry, sugar berry.

Uses

Erosion control: Common hackberry is included in windbreak plantings to control wind erosion. Additionally, its deep root system makes common hackberry useful for preventing soil erosion on disturbed sites.

Ethnobotanic: Native Americans valued common hackberry for medicinal, food, and ceremonial purposes. Medicinally, the bark was decocted to serve as a gynecological aid that could induce abortion, regulate menstrual cycles, and treat venereal diseases. Bark decoctions were also taken for sore throats.

The drupes of common hackberry were mixed with fat and corn to form porridge or crushed to add flavor to foods. They were also pounded into a paste, molded onto a stick and baked over an open fire.

Common hackberry was used as the fuel source for the altar fire at peyote ceremonies, prayer ceremonies that utilized the hallucinogenic peyote cactus. At the beginning of each of the four stages of the ceremony, the altar fire was replenished with common hackberry wood.

Ornamental: Although the features of common hackberry are not considered attractive, it is commonly used as a street tree because of its ability to withstand drought and tolerate urban environments. Common hackberry is also a bonsai species.

Wildlife: Wild turkey, ring-necked pheasant, quail, grouse, lesser prairie chicken, cedar waxwing, robins, and other bird species consume common hackberry fruit, which persist throughout the winter. Small mammals also consume the fruit. Deer will browse common hackberry leaves in the absence of preferred browse species. Common hackberry provides good cover for species such as mule deer, white-tailed deer, upland game birds, small non-game birds, and small mammals.

Wood products: Common hackberry is most commonly used as firewood. It is not valuable as a timber tree, but is sometimes used to produce inexpensive furniture. Its wood quality is comparable to that of elm and white ash.

Legal Status

Common hackberry is listed as threatened in New Hampshire. Please consult the PLANTS Web site (<http://plants.usda.gov>) 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: Elm Family (Ulmaceae). Common hackberry is a large deciduous tree reaching 12 m to 18 m in height at maturity. It typically lives to be 150 to 200 years old and exhibits its greatest annual growth between 20 and 40 years of age. The bark is grayish and warty, and stems have a zigzag appearance. The branches tend to droop, giving

mature trees a cylindrical shape and the appearance of even and equal spread of branches. Leaves are alternately arranged, simple, 7 to 12 cm long, and sharply toothed. They are dark green above, paler beneath, have asymmetrical leaf bases (oblique), and sometimes have a rough texture. Flowers are small, greenish-yellow, and emerge in April and May with the leaves. Fruit are small greenish drupes that change to dark red or black upon maturity in September and October.

Distribution: Common hackberry is native to the United States. It occurs from Maine and Quebec, west to North Dakota, Wyoming and Colorado, and south to Texas and Georgia. For current distribution, please consult the Plant Profile page for this species on the PLANTS Web site (<http://plants.usda.gov>).

Habitat: Common hackberry is the dominant species of the green ash-western snowberry plant communities in Nebraska and South Dakota and in the plains cottonwood-western snowberry communities in Montana, North Dakota, South Dakota, and Wyoming. Although it is primarily a bottomland species, it is also found within upland communities on slopes and bluffs, limestone outcrops, and rocky hillsides.

Adaptation

The USDA hardiness zones of common hackberry are 2 thru 9. Although it is difficult to determine, it is considered a late-succession or climax species because it grows well in deep shade. Seedlings are found beneath heavy canopies, where other species cannot survive.

Common hackberry is able to grow in a variety of sites and soil types. Although it grows best in moist soils near stream banks and on flood plains, it will grow on dry, less fertile soils. Annual height growth will decrease in drier soils. Common hackberry can also survive long periods of drought due to its deep root system. It will not occur on sites with a permanently high water table, but mature trees can survive periods of excessive flooding.

In the most favorable soil conditions, growth can exceed 0.4 m per year within the first 6 years of planting. In poor dry sites, growth is slow (less than 2.5 cm per year) and some common hackberry plants appear shrub-like. It prefers limestone soils and is not tolerant of salt spray or soils with a pH greater than 8.

Management

Common hackberry is susceptible to frost damage in the northern portions of its range. For this reason, it

is best to plant it in the second or third row of either the windward or leeward half of windbreaks.

A few studies indicate that fire suppresses growth and regeneration of common hackberry. Seedlings will not emerge in sunlight provided by a newly opened canopy. Low intensity fires will injure trees or reduce their reproductive potential while high intensity fires may kill some trees. Wounds caused by fire attract insects or fungi that can pose more problems for the plant.

Pests and Potential Problems

Insect and fungal infestations make common hackberry plants unattractive, but generally do not kill them. Common hackberry is host to gall-producing insects including the hackberry petiole gall psyllid, hackberry nipplegall maker, hackberry bud gall maker, and the hackberry blistergall psyllid (all in the genus *Pachypsylla*).

Leaf spot fungi frequently occur on common hackberry trees. More damaging is the witches' broom disease that causes rosette formation on branch tips. Witches' broom is initiated by the combined infestation of a gall mite and powdery mildew. Fungal infection by oak fungus (*Armillaria mellea*) causes root rot on injured trees, leading to death.

Seeds and Plant Production

Common hackberry seeds are ready for collection in September and October. They can be dried to less than 5% moisture content and remain viable throughout long storage periods. One study showed no loss in viability following 5.5 years in sealed storage at 10°C. Seeds will germinate at 21°C following 60 to 90 days of cold stratification at 5°C. Germination may increase with sulfuric acid (H₂SO₄) application. Treat seeds with concentrated H₂SO₄ for one hour, wash with water, and treat for another hour in H₂SO₄.

Cultivars, Improved, and Selected Materials (and area of origin)

The USDA NRCS Plant Materials Program has released 'Oahe' for urban plantings in North Dakota, Montana, South Dakota, and Minnesota.

Other cultivars available from commercial sources include 'Magnifica,' 'Prairie Pride,' and 'Chicagoland.' These cultivars were developed for plant shape, straighter trunks, drought resistance, salt tolerance, and adaptation to compacted soils.

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."

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Edited: 23June2004 sbw; 20Oct2004 rln; 05jun06 jsp

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>>

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