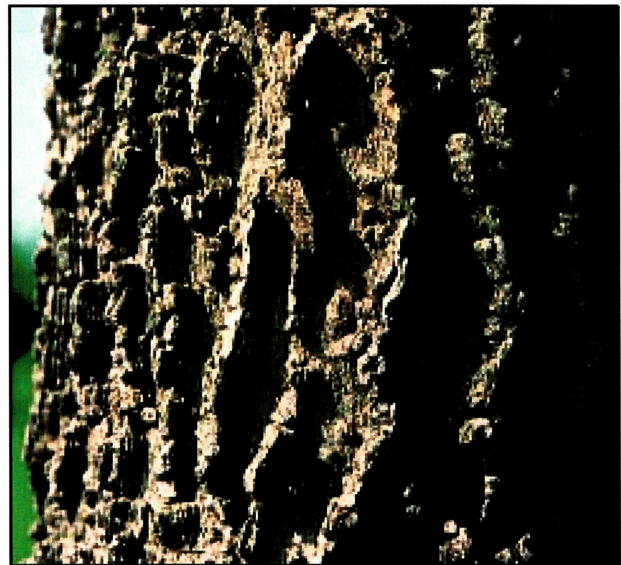


## Common Hackberry



# Common Hackberry (*Celtis occidentalis*)

## General Description

A medium-sized tree native to North Dakota. A good replacement tree for the American Elm because of its similar form and adaptability. Gray, unique stucco-like bark. The largest tree in North Dakota is 70 feet tall with a canopy spread of 62 feet.

### Leaves and Buds

Bud Arrangement - Alternate, with no terminal bud. Buds are flattened and pressed against the twig, rather inconspicuous.

Bud Color - Chestnut-brown and downy.

Bud Size - Lateral buds are 1/4 inch long, ovate, and sharp-pointed.

Leaf Type and Shape - Simple, acuminate-tipped, ovate-oblong.

Leaf Margins - Serrate except at the oblique base.

Leaf Surface - Smooth to sometimes scabrous above, glabrous or slightly hairy on veins beneath.

Leaf Length - 2 to 5 inches.

Leaf Width - 1 to 2½ inches.

Leaf Color - Bright-green above, paler below; yellow fall color.

### Flowers and Fruits

Flower Type - Polygamo-monoecious, with male flowers in clusters, perfect and pistillate flowers, solitary.

Flower Color - Pale-green flowers.

Fruit Type - A rounded, 1/4 inch pitted fruit called a drupe.

Fruit Color - Dark-purple.

### Form

Growth Habit - Narrow when young, broadening at the top and arching out when mature.

Texture - Medium, summer; medium, winter.

Crown Height - 40 to 60 feet.

Crown Width - 25 to 45 feet.

Bark Color - Grayish with distinct narrow, corky ridges that appear as eroded wart-like projections.

Root System - Spreading, shallow to deep, depending on soils. Occasionally will have a strong taproot.

## Environmental Requirements

### Soils

Soil Texture - Performs well on a variety of soils.

Soil pH - 6.0 to 8.0. Somewhat tolerant to alkaline soils.

Windbreak Suitability Group - 1, 1K, 3, 4, 4C, 5.

### Cold Hardiness

USDA Zone 2.

### Water

Moderately drought tolerant but does best on moist, well-drained sites. May compensate for droughty conditions by dropping a portion of the leaves when under stress.

### Light

Full sun to partial shade.

## Uses

### Conservation/Windbreaks

Medium to tall tree for farmstead and field windbreaks, riparian plantings and highway beautification.

### Wildlife

Fruit is eaten by many birds and mammals. Excellent tree for wildlife.

### Agroforestry Products

Wood - Boxes, crates, and firewood.

Food - Native Americans used fruits to flavor meat in same manner as black pepper.

### Urban/Recreational

Performs well in relatively dry and windy areas. Excellent for ornamental landscaping, parks, and boulevards.

## Cultivated Varieties

Oahe Hackberry (*Celtis occidentalis* 'Oahe') - Released by USDA-ARS, Great Plains Research Station, Mandan, North Dakota, and USDA-NRCS Plant Materials Center, Bismarck, North Dakota. A cultivar seed strain.

## Related Species

Sugar Hackberry (*Celtis laevigata*) - Deficient in hardiness and adaptation in North Dakota.

## Pests

Commonly damaged by browsing rodents, rabbits, and deer. Nipple gall and witches'-broom tend to reduce its foliage/twig aesthetic quality.



## COMMON HACKBERRY

*Celtis occidentalis* L.  
Plant Symbol = CEOC

Contributed by: USDA NRCS Plant Materials  
Program



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### Uses

**Wildlife:** Birds use the mature trees for nesting sites and feed on the fruit. Young stands also provide shelter for game birds, rabbits, and deer.

**Erosion control:** Hackberry has been used as an ornamental tree and in multi-row windbreaks.

**Livestock:** Grazing understory species can be helpful in reducing weed competition, however if young seedlings are grazed tree defects could occur resulting in low quality timber.

**Timber:** Hackberry has limited value in the manufacture of paneling and furniture.

### Status

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

*Celtis occidentalis* L., common hackberry, varies in size from a shrub to a tree in excess of 100 feet tall. It is widespread in the United States east of the Rocky Mountains. Hackberry grows best on moist alluvial soils, and occurs only as scattered trees mixed with other hardwoods. The leaves are 2 ½ to 4 inches long, and 1 ½ inches wide, oval to lance-shaped, and resemble those of the elm but are more sharply pointed. The bark is grayish brown, with characteristic corky warts or ridges becoming somewhat scaly. The fruit is 1/4 inch to 1/3 inch in diameter, oval to somewhat round, dark red or purple, ripening in September and October, but remaining on the tree for several months.

### Adaptation and Distribution

Hackberry is commonly found on rich, moist sites along stream banks or on flood plains, but will perform well under more adverse conditions. It tolerates alkaline or acid soil conditions, full sun, and wind. It grows in winter hardiness zones 2 through 8. New growth is subject to spring frost injury. Common hackberry requires at least 14 inches annual precipitation.

Hackberry is distributed throughout the eastern and midwestern United States. For a current distribution map, please consult the Plant Profile page for this species on the PLANTS Website.

### Establishment

Bareroot seedlings of hackberry grown under standard nursery practices exhibit a degree of dormancy. Planting material should be spring lifted followed by sweat treatments for one week at 60 °F, just prior to planting. The sweating procedure involves placing the seedlings in moist sand or peat moss and covering with plastic. Conservation grade stock can be either 1 or 2 years old and 12 to 24 inches tall, with a caliper of 3/16 to 1/2 inch.

### Management

Grazing should be controlled during establishment. Without protective netting, deer and rabbits will

severely damage the young seedlings. Weed competition should be controlled by grazing or by using approved herbicides.

Mature seeds can be hand-picked in September and October. Hackberry seeds exhibit dormancy which can be overcome with stratification in moist sand at 41 °F for 90 days or by fall planting. Fermenting the fruit for 3 days and de-pulping before stratification improves germination.

#### **Pests and Potential Problems**

The most common diseases found on hackberry are nipple gall and witches broom gall. These diseases are not fatal, but do affect the appearance and vigor of the plant.

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

Seedlings are available at most hardwood nurseries. 'Oahe' (South Dakota) is recommended for use as farmstead, field and wildlife windbreaks in the Northern Great Plains. 'Prairie Pride' was selected in Illinois and is not known to develop witches broom gall.

#### **Prepared By & Species Coordinator:**

USDA NRCS Plant Materials Program

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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>>

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## Hackberry

*Celtis occidentalis*

**Growth Form:** globular

**Crown Density:** moderate

**Size:** 40-60 feet high

40-60 foot spread

**Drought Resistance:** very good

**Cold Hardiness:** very good

**Growth Rate:** rapid to moderate

**Life Span:** long

**Elevational Range:** to 7,000 feet

**Soil Conditions:** tolerates alkaline well; moderately salt tolerant

**Possible Insect Problems:** leaf gall psyllids; spiny elm caterpillar; nipple gall always present

**Possible Disease Problems:** hackberry witches' broom

**Wildlife Value:** high; songbirds and small mammals

**Seasonal Color:** pale lemon-yellow foliage in fall

**Miscellany:** native; wood of commercial value



Taken from: Trees for Conservation, a buyer's guide, Colorado State Forest Service