

Black Walnut



Black Walnut (*Juglans nigra*)

General Description

A large oval to rounded, somewhat open-crowned tree. Considered the most valuable timber tree. The tree is borderline hardy in North Dakota and some seedling sources will be subject to winter dieback. Select hardy North Dakota seed sources. The largest tree in North Dakota is 65 feet tall with a canopy spread of 50 feet.

Leaves and Buds

Bud Arrangement - Alternate.

Bud Color - Buds are pale, silky-downy, ovate, and grayish, superposed.

Bud Size - About 1/3 inch long and slightly longer than wide.

Leaf Type and Shape - Pinnately compound, with 15 to 23 leaflets.

Leaf Margins - Leaflets are ovate-oblong, to ovate-lanceolate, acuminate, rounded at the base, and irregularly serrate.

Leaf Surface - Upper surface at first minutely hairy, finally nearly smooth and somewhat shiny; underside is hairy and glandular.

Leaf Length - 10 to 20 inches; leaflets 2 to 4 inches.

Leaf Width - 2 to 6 inches; leaflets 1/2 to 1½ inches.

Leaf Color - Green leaflets; yellow fall color.

Flowers and Fruits

Flower Type - Catkins, 2 to 7 inches long.

Flower Color - Greenish.

Fruit Type - A globular drupe bearing a nut 1 to 2 inches across, indehiscent, edible.

Fruit Color - Green husk, until ripening in fall, when it turns black.

Form

Growth Habit - Under forest conditions devoid of branches to ½ its height. Open-grown trees are frequently forked and limby.

Texture - Medium, summer; coarse, winter.

Crown Height - 35 to 60 feet.

Crown Width - 30 to 50 feet.

Bark Color - Bark is thick, ridged, very dark brown, with deep diamond-shaped furrows.

Root System - Produces a deep, extensive taproot, which makes transplanting difficult. Roots and decaying plant parts release a toxic compound (juglone) which inhibits the growth of other plants growing near Black Walnut trees.

Environmental Requirements

Soils

Soil Texture - Sensitive to soil conditions. Does best on deep, well-drained, fertile, loamy soils.

Soil pH - 6.0 to 7.5.

Windbreak Suitability Group - 1, 3.

Cold Hardiness

USDA Zone 4.

Water

Prefers moist well-drained soils. Does not withstand extended ponding or drought.

Light

Full sun, tolerates partial shade.

Uses

Conservation/Windbreaks

Medium tree for protected areas of farmstead windbreaks in eastern part of North Dakota.

Wildlife

Used extensively by over 20 species of wildlife for food and cover.

Agroforestry Products

Wood - Heartwood is a rich dark brown and used for veneer and furniture. The wood is heavy, hard, strong, close-grained, durable, and is easily worked. Nut shells are ground for industrial polishing and cleaning. Pulp and roots are used to make a black dye.

Food - Confectionery uses for nuts.

Medicinal - Used as a laxative, an astringent for treatment of skin problems and in cancer research.

Urban/Recreational

Used for parks and other large landscape areas. Less suitable for small yards and boulevards because of its large size and messy fruit.

Cultivated Varieties

Juglans nigra 'Laciniata' - Finely dissected leaflets, but not winter hardy in North Dakota.

Related Species

Butternut (*Juglans cinerea*) - Use North Dakota seed sources.

Manchurian Walnut (*J. mandshurica*) - Hardy in limited plant evaluations in North Dakota.

Pests

No major pest problems. Plant extracts are found to be effective against certain insect pests.