

Fraxinus pennsylvanica: Green Ash¹

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Introduction

The somewhat irregularly-shaped tree when young becoming an oval with age, green ash will reach a height of about 70 feet with a spread of 45 feet. Upright main branches bear twigs which droop toward the ground then bend upward at their tips much like Basswood. This usually does not interfere with traffic flow beneath the tree since branches do not droop to the ground. The glossy dark green foliage will turn yellow in the fall, but color is often muted in the south. There is a good seed-set annually on female trees which are used by many birds but some consider the seeds to be messy. This fast-growing tree will adapt to many different landscape conditions and can be grown on wet or dry sites, preferring moist. Trees in USDA hardiness zones 8 and 9 may grow 6 to 10 feet in one year when they are young and irrigated. Some cities are overplanted with green ash.

General Information

Scientific name: *Fraxinus pennsylvanica*

Pronunciation: FRACK-sih-nus pen-sill-VAN-ih-kuh

Common name(s): Green ash

Family: *Oleaceae*

USDA hardiness zones: 3A through 9A (Figure 2)

Origin: native to the eastern half of the United States, stretching as far northwest as Alberta, Canada, and as far northeast as Nova Scotia, Canada

UF/IFAS Invasive Assessment Status: native

Uses: reclamation; shade; street without sidewalk; parking lot island > 200 sq ft; sidewalk cutout (tree pit); tree lawn > 6 ft wide; urban tolerant; highway median



Figure 1. Full Form—*Fraxinus pennsylvanica*: Green ash

1. This document is ENH425, one of a series of the Environmental Horticulture Department, UF/IFAS Extension. Original publication date November 1993. Revised December 2006 and December 2018. Visit the EDIS website at <https://edis.ifas.ufl.edu> for the currently supported version of this publication.
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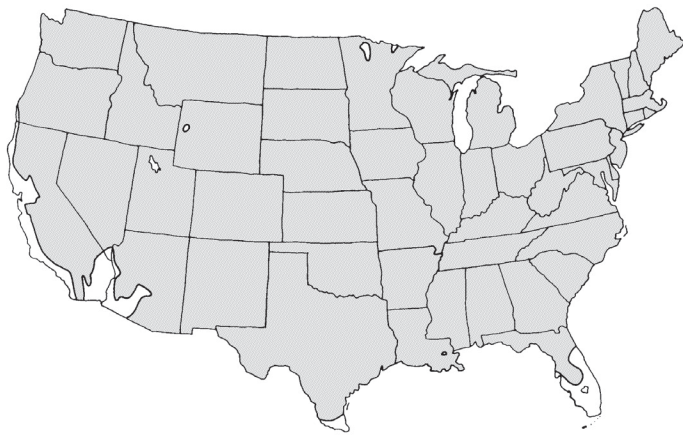


Figure 2. Range

Description

Height: 60 to 70 feet

Spread: 45 to 50 feet

Crown uniformity: symmetrical

Crown shape: upright/erect, oval

Crown density: moderate

Growth rate: fast

Texture: medium

Foliage

Leaf arrangement: opposite/subopposite

Leaf type: odd-pinnately compound; made up of 5 to 9 leaflets

Leaf margin: serrate, crenate, entire

Leaf shape: ovate, lanceolate

Leaf venation: pinnate

Leaf type and persistence: deciduous

Leaf blade length: 9 to 16 inches; leaflets are 2 to 4 inches

Leaf color: dark green on top, paler green underneath

Fall color: yellow

Fall characteristic: showy

Flower

Flower color: greenish yellow

Flower characteristics: not showy; lacks petals and emerges in clusters on loose panicles

Flowering: spring

Fruit

Fruit shape: oblanceolate to spatulate, winged samara

Fruit length: 1 to 3 inches

Fruit covering: dry or hard

Fruit color: green

Fruit characteristics: attracts birds; showy; fruit/leaves a litter problem

Fruiting: matures in the fall



Figure 3. Leaf—*Fraxinus pennsylvanica*: Green ash



Figure 5. Fruit—*Fraxinus pennsylvanica*: Green ash

Trunk and Branches

Trunk/branches: branches don't droop; not showy; typically one trunk; no thorns

Bark: ash gray to gray brown, with corky furrows and ridges in an interwoven diamond-shaped pattern

Pruning requirement: needed for strong structure

Breakage: susceptible to breakage

Current year twig color: brown, gray

Current year twig thickness: thick

Wood specific gravity: 0.56

Culture

Light requirement: full sun

Soil tolerances: sand; loam; clay; alkaline; acidic; extended flooding; well-drained

Drought tolerance: high

Aerosol salt tolerance: moderate



Figure 6. Bark—*Fraxinus pennsylvanica*: Green ash
Credits: Gitta Hasing

Other

Roots: can form large surface roots

Winter interest: no

Outstanding tree: no

Ozone sensitivity: sensitive

Verticillium wilt susceptibility: susceptible

Pest resistance: sensitive to pests/diseases

Use and Management

Green ash requires regular pruning when it is young to develop a nice central trunk. It tends to develop a number of dominant upright trunks or multiple leaders if it is pruned improperly or left unpruned. Some nursery operators routinely top them in the nursery to create a bushy tree. This is not a good practice and these trees should not be planted because they will not stay together in a strong storm. Be sure the trees have one central leader (one trunk) and branches which are well spaced along the trunk. If two major branches originate opposite each other, remove one to improve tree structure and strength.

Green ash adapts quite well to city street tree planting pits and other confined soil spaces, probably due to its tolerance to flooded and wet soil. However, extensive use as a street tree could be risky because of potential insect and disease problems, especially borers. Like some other rapidly-growing trees, surface roots can develop and become a nuisance as they lift curbs, sidewalks and make mowing difficult. Planting only in well-drained uncompacted soil

may help keep surface rooting in check. Using root barriers around the edge of planting pits and along sidewalks would deflect roots down, encouraging deeper rooting and less maintenance problems. Green ash roots can tolerate the low soil oxygen conditions present at these greater soil depths. Trees transplant easily from field nurseries or from containers and adapt to urban soils including those with high pH, salt and droughty sites.

Seedling grown trees often produce an abundance of seed which can be a nuisance, and female trees often have undesirable flower galls. Superior crown form and branching habit of cultivars makes planting cultivars very desirable. A few cultivars are available and have been tested for eight years in USDA hardiness zone 8a and appear vigorous with yellow fall color. 'Marshall Seedless' has some seeds, yellow fall color, fewer insect problems, but is losing popularity due to trees breaking apart, and the population has apparently become contaminated with females since some are setting seed. 'Newport' may be superior; 'Patmore' is an excellent street tree, straight trunk, good yellow fall color, seedless, USDA hardiness zone 3 to 7. 'Summit' is a female with yellow fall color and straight trunk, but pruning is required to develop strong structure; abundant seeds and flower galls can be a nuisance. Cultivars are budded onto seedling rootstocks. 'Cimmaron' is a new plant (USDA hardiness zone 3) reported to have a strong trunk, good lateral branching habit, and tolerance to salt. 'Aerial' is also new, with a narrow columnar habit of unknown height and spread. The parent was 'Summit' green ash.

Pests

Borers are common on ash and they can kill trees. The most common borers infesting ash are ash borer, lilac borer and carpenterworm. Ash borer burrow into the trunk at or near the soil line causing tree dieback. Lilac borer causes swellings on the trunk and limbs where the insect enters the tree. The carpenterworm larvae bore into the heartwood but come to the outside of the tree to push out frass and sawdust. Heavily infested trees can be severely weakened. Keep trees as healthy as possible by fertilizing regularly and watering during dry weather.

Aphids are often seen but are usually not serious.

In late summer, fall webworm covers branches with webbing. The nests in branches close to the ground can be pruned out when first noticed.

The ash flower-gall looks like a disease but is actually a mite problem. The mites feed on the flowers causing abnormal

growth. The galls dry out and persist on the tree into winter. Apply horticultural oil sprays before bud break.

Diseases

A rust disease causes distorted leaves and swollen twigs. Small, yellow, cup-like structures, producing yellow spores, appear on the infected areas. Controls are usually not needed.

A number of fungi cause leaf spots on Ash. The disease is worse in wet years and is partially controlled by gathering and disposing of diseased, fallen leaves.

Anthrachnose is also called leaf scorch and leaf spot. Infected parts of the leaves turn brown, especially along the margins. Infected leaves fall prematurely. Rake up and destroy infected leaves. Chemical controls are not practical or economical on large trees. Trees in the south can be severely affected.

Canker diseases cause branch dieback and death of the tree when the trunk is infected. Try to keep trees healthy with regular fertilization.

Powdery mildew makes a white coating on the leaves.

Ash ring spot virus causes chlorotic green and reddish spots or rings on the leaves. Infected trees may be stunted and dieback.

Verticillium wilt causes branches of infected trees to wilt and die, eventually the entire tree may die. Keep trees healthy and fertilize infected trees with high nitrogen fertilizer to suppress disease symptoms.

Reference

Koeser, A. K., Hasing, G., Friedman, M. H., and Irving, R. B. 2015. Trees: North & Central Florida. Gainesville: University of Florida Institute of Food and Agricultural Sciences.