



Aesculus hippocastanum Horsechestnut¹

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INTRODUCTION

Horsechestnut can grow 90 or 100 feet tall, but is often 50 to 75 feet in the landscape with a spread of 40 to 50 feet (Fig. 1). The trunk grows to three feet thick and is covered with dark, somewhat exfoliating bark. The prominent white flowers, occurring in panicles at the branch tips, are the main ornamental feature of Horsechestnut. The large brown nuts covered with spiny husks fall and can dent cars and create a hazard on hard surfaces as people roll on the golfball-sized fruit.

GENERAL INFORMATION

Scientific name: *Aesculus hippocastanum*
Pronunciation: ESS-kew-lus hip-oh-kass-TAY-num
Common name(s): Horsechestnut, European Horsechestnut
Family: *Hippocastanaceae*
USDA hardiness zones: 4 through 7 (Fig. 2)
Origin: not native to North America
Uses: screen; shade tree; specimen; residential street tree
Availability: generally available in many areas within its hardiness range

DESCRIPTION

Height: 50 to 80 feet
Spread: 40 to 50 feet
Crown uniformity: symmetrical canopy with a regular (or smooth) outline, and individuals have more or less identical crown forms
Crown shape: oval; round

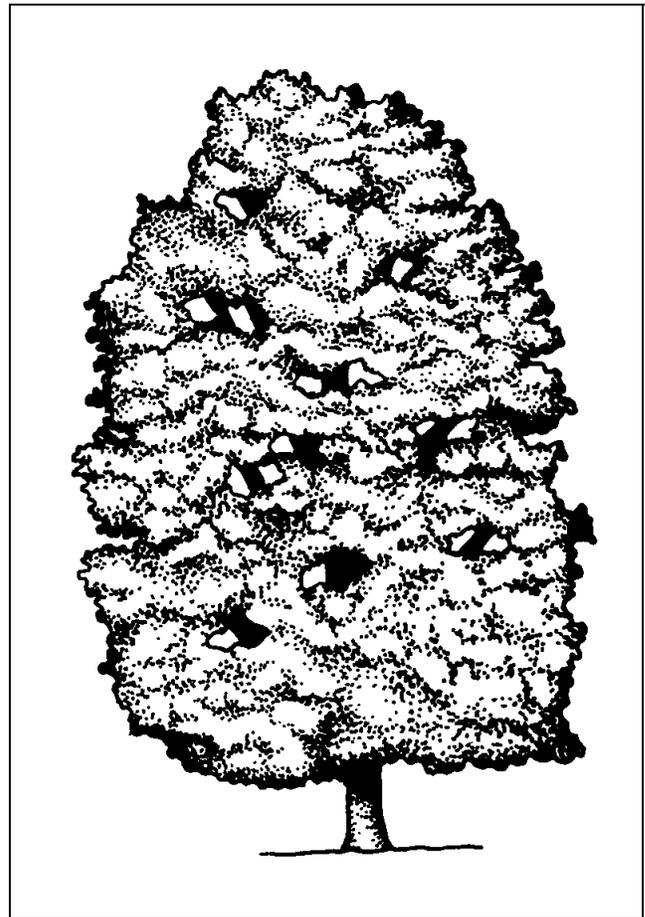


Figure 1. Mature Horsechestnut.

Crown density: dense
Growth rate: medium
Texture: coarse

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Figure 2. Shaded area represents potential planting range.

Foliage

- Leaf arrangement:** opposite/subopposite (Fig. 3)
- Leaf type:** palmately compound
- Leaflet margin:** double serrate
- Leaflet shape:** obovate
- Leaflet venation:** pinnate
- Leaf type and persistence:** deciduous
- Leaflet blade length:** 8 to 12 inches; 4 to 8 inches
- Leaf color:** green
- Fall color:** yellow
- Fall characteristic:** not showy

Flower

- Flower color:** white
- Flower characteristics:** spring flowering; very showy

Fruit

- Fruit shape:** oval; round
- Fruit length:** 1 to 3 inches
- Fruit covering:** dry or hard
- Fruit color:** brown

Fruit characteristics: attracts squirrels and other mammals; fruit, twigs, or foliage cause significant litter; showy

Trunk and Branches

- Trunk/bark/branches:** droop as the tree grows, and will require pruning for vehicular or pedestrian clearance beneath the canopy; showy trunk; should be grown with a single leader; no thorns
- Pruning requirement:** requires pruning to develop strong structure
- Breakage:** resistant
- Current year twig color:** brown
- Current year twig thickness:** stout

Culture

- Light requirement:** tree grows in full sun
- Soil tolerances:** clay; loam; sand; acidic; alkaline; well-drained
- Drought tolerance:** moderate
- Aerosol salt tolerance:** moderate
- Soil salt tolerance:** moderate

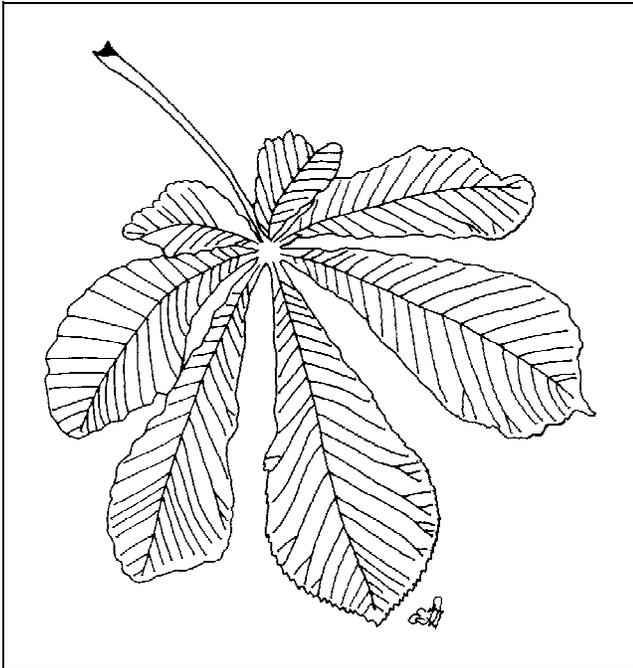


Figure 3. Foliage of Horsechestnut.

Other

Roots: surface roots are usually not a problem

Winter interest: tree has winter interest due to unusual form, nice persistent fruits, showy winter trunk, or winter flowers

Outstanding tree: not particularly outstanding

Invasive potential: little, if any, potential at this time

Ozone sensitivity: tolerant

Verticillium wilt susceptibility: not known to be susceptible

Pest resistance: very sensitive to one or more pests or diseases which can affect tree health or aesthetics

USE AND MANAGEMENT

The growth rate is rapid while the tree is young but slows down with age. Horsechestnut is weak-wooded and some branches break from the trunk under ice or snow loads. The tree usually develops leaf scorch in dry soil, and powdery mildew during the summer, causing leaves to drop. Leaf blotch disease is also common. This limits its wide use in any one area, but any landscape would benefit from a Horsechestnut or two. It is also very tolerant of city conditions and does well in small, restricted root zone areas such as along streets. Sensitivity to air pollution injury makes it unsuited for downtown areas - best in the suburbs.

Horsechestnut prefers a sunny exposure sheltered from wind but casts dense shade with coarse-textured

leaves. The tree is easily transplanted and grows in almost any urban soil, including alkaline. The large leaves, nuts and dropping twigs create litter which is considered by many to be objectionable. It is probably best located away from hard surfaces where people can enjoy it from a distance. Only moderately drought-tolerant. Will grow in calcareous soil.

Several cultivars can be found but they will still have leaf scorch problems: 'Baumannii' - 70 feet tall, oval, pH-adapted, has double flowers, grows slower and does not produce any nuts, if the tree is grown this cultivar is highly recommended; 'Pendula' - has drooping branches; 'Pyramidalis' - upright; 'Rubicunda' - flowers salmon red; 'Tortuosa' - contorted growth.

Pests

White-marked tussock moth is a fuzzy caterpillar. The insect has black marks and four tufts of hair on its back.

Japanese beetle eats the leaves down to the veins. Leaves at the top and south side of the plant are often most affected and attacks can be quite sudden.

Diseases

Leaf blotch causes diseased areas of variable size on the leaves. The diseased areas are at first discolored and water-soaked, later turning light reddish brown with bright yellow margins. If the entire leaf is affected it will dry, turn brown, and fall off. Leaf stalks may also be attacked. This disease looks very much like scorch from dry soil and is prevalent over a wide geographical area. Rake up and destroy old leaves.

A leaf spot disease will cause small brown circular spots on the leaves.

Powdery mildew covers the undersides of the leaves with white mold.

Anthrax may infect terminal shoots several inches from the tip. The infected area is shrunken and the outer layers of tissue may be ruptured.

Leaf scorch is a physiological problem but will not kill the tree. The leaf margins turn brown then browning moves progressively inward between the veins. Eventually the entire leaf turns brown. The condition occurs in mid-summer. Keep the plant

well-watered during dry weather.