**Aesculus hippocastanum: Horsechestnut**

Edward F. Gilman and Dennis G. Watson

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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. 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.

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**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:** 4A through 7B (Fig. 2)
- **Origin:** not native to North America
- **Invasive potential:** little invasive potential
- **Uses:** shade; street without sidewalk; screen; specimen
- **Availability:** not native to North America

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**Description**

Height: 50 to 80 feet  
Spread: 40 to 50 feet  
Crown uniformity: symmetrical  
Crown shape: oval, round  
Crown density: dense  
Growth rate: moderate  
Texture: coarse

**Foliage**

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

**Flower**

Flower color: white/cream/gray  
Flower characteristics: 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/mammals; showy; fruit/leaves a litter problem

**Trunk and Branches**

Trunk/bark/branches: branches droop; showy; typically one trunk; thorns  
Pruning requirement: needed for strong structure  
Breakage: resistant  
Current year twig color: brown  
Current year twig thickness: very thick  
Wood specific gravity: unknown

**Culture**

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

**Other**

Roots: not a problem  
Winter interest: yes  
Outstanding tree: no  
Ozone sensitivity: tolerant  
Verticillium wilt susceptibility: resistant  
Pest resistance: sensitive to pests/diseases

**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 zones 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 that 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, so 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.

Anthracnose 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, and 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.