



# *Koelreuteria bipinnata* Chinese Flame-Tree<sup>1</sup>

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## INTRODUCTION

A yellow carpet of fallen petals, delicate leaflets which cast a mosaic of welcoming shade, and large clusters of persistent rose-colored, papery capsules all help to make Chinese Flame-Tree a very popular landscape tree over a wide area of the south (Fig. 1). One of only a few yellow-flowering trees for the mid- and deep-south landscape. This broad-spreading, deciduous tree reaches a height of 40 to 60 feet and eventually takes on a flat-topped, somewhat irregular silhouette. It is often used as a patio, shade, street, or specimen tree. The small, fragrant, yellow flowers appear in very showy, dense, terminal panicles in early summer, and are followed in late summer or fall by large clusters of the two-inch-long "Chinese lanterns". These papery husks are held above the foliage and retain their pink color after drying and are very popular for use in everlasting flower arrangements. The bark on Chinese Flame-Tree is smooth and light brown when young, becoming ridged and furrowed as the tree matures. Easily distinguished from *Koelreuteria paniculata* since *Koelreuteria bipinnata* has more upright branches and has twice compound leaves, whereas *Koelreuteria paniculata* has single pinnate compound leaves.

## GENERAL INFORMATION

**Scientific name:** *Koelreuteria bipinnata*

**Pronunciation:** kole-roo-TEER-ee-uh  
bye-pih-NAY-tuh

**Common name(s):** Chinese Flame-Tree,  
Bougainvillea Goldenraintree

**Family:** *Sapindaceae*



Figure 1. Young Chinese Flame-Tree.

**USDA hardiness zones:** 7 through 10A (Fig. 2)

**Origin:** not native to North America

**Uses:** container or above-ground planter; large parking lot islands (> 200 square feet in size); wide tree lawns (>6 feet wide); medium-sized parking lot islands (100-200 square feet in size); medium-sized tree lawns (4-6 feet wide); recommended for buffer

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**Figure 2.** Shaded area represents potential planting range.

strips around parking lots or for median strip plantings in the highway; reclamation plant; shade tree; small parking lot islands (< 100 square feet in size); narrow tree lawns (3-4 feet wide); specimen; sidewalk cutout (tree pit); residential street tree; tree has been successfully grown in urban areas where air pollution, poor drainage, compacted soil, and/or drought are common

**Availability:** generally available in many areas within its hardiness range

**DESCRIPTION**

**Height:** 20 to 35 feet

**Spread:** 25 to 35 feet

**Crown uniformity:** irregular outline or silhouette

**Crown shape:** round

**Crown density:** open

**Growth rate:** fast

**Texture:** medium

**Foliage**

**Leaf arrangement:** alternate (Fig. 3)

**Leaf type:** bipinnately compound

**Leaflet margin:** incised; serrate

**Leaflet shape:** oblong; ovate

**Leaflet venation:** pinnate

**Leaf type and persistence:** deciduous

**Leaflet blade length:** 2 to 4 inches

**Leaf color:** green

**Fall color:** yellow

**Fall characteristic:** showy

**Flower**

**Flower color:** yellow

**Flower characteristics:** pleasant fragrance; summer flowering; very showy

**Fruit**

**Fruit shape:** elongated; oval

**Fruit length:** 1 to 3 inches

**Fruit covering:** dry or hard

**Fruit color:** pink

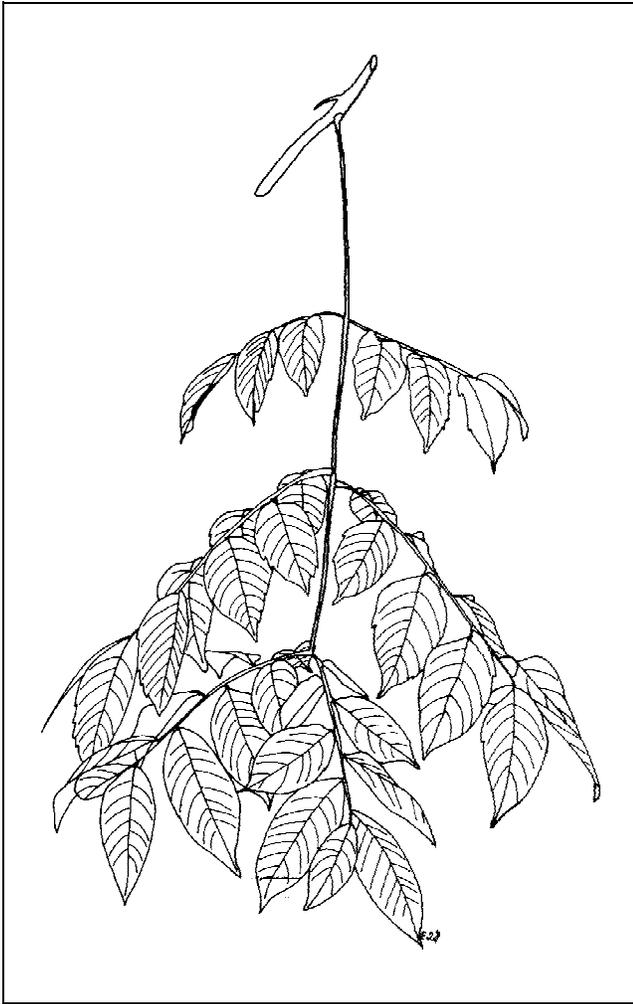


Figure 3. Foliage of Chinese Flame-Tree.

**Fruit characteristics:** does not attract wildlife; no significant litter problem; persistent on the tree; showy

### Trunk and Branches

**Trunk/bark/branches:** bark is thin and easily damaged from mechanical impact; droop as the tree grows, and will require pruning for vehicular or pedestrian clearance beneath the canopy; not particularly showy; should be grown with a single leader; no thorns

**Pruning requirement:** requires pruning to develop strong structure

**Breakage:** susceptible to breakage either at the crotch due to poor collar formation, or the wood itself is weak and tends to break

**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; extended flooding; well-drained

**Drought tolerance:** high

**Aerosol salt tolerance:** moderate

### Other

**Roots:** surface roots are usually not a problem

**Winter interest:** no special winter interest

**Outstanding tree:** tree has outstanding ornamental features and could be planted more

**Invasive potential:** No entries found.

**Verticillium wilt susceptibility:** susceptible

**Pest resistance:** long-term health usually not affected by pests

### USE AND MANAGEMENT

Trees need to be trained when young to develop a strong branch structure. On weak-wooded trees such as Chinese Flame-Tree, spacing main branches apart along a central trunk is crucial to developing a durable tree. As soon as you see them, remove any double or multiple trunks which develop, especially if they have embedded or pinched bark in the branch crotch. Be sure to locate the first major branch high enough off the ground so that drooping leaves and branches will not get in the way of traffic below. Train major branches so they grow up and out, spreading from the trunk to create the clearance needed for street tree or parking lot planting.

The tree definitely has a place in many landscapes. Planted in a full sun location, Chinese Flame-Tree makes a moderately dense shade tree, but there is considerable variation among individuals of the species. Properly pruned and trained trees can be planted as street or parking lot trees, but do not commit large areas to Chinese Flame-Tree due to the possibility of them breaking up as they reach about 30 years old. They will be the source of many compliments when they are in flower and fruit.

This is a tough tree which should be grown in full sun on any well-drained soil, in sand or heavy clay, and should receive moderate watering. The tree becomes leggy and thin in partial shade. When well-established, it tolerates wind, air pollution, salt, heat, and drought.

Propagation is by seed, which will germinate within six to eight days.

Some nurseries are mistakenly growing *Koelreuteria elegans* or *Koelreuteria formosana* which is only cold hardy to USDA hardiness zone 9 instead of *Koelreuteria bipinnata* which is cold hardy to USDA hardiness zone 7b. This problem has given Chinese Flame-Tree a bad name in some areas of the mid-south. Be sure to get northern seed source for propagation to ensure cold hardiness in the northern part of its range.

### **Pests and Diseases**

No pests or diseases are of major concern. Root rot on old trees. A canker causes dead and sunken areas on the bark. Coral pink fruiting bodies develop on the diseased bark. Prune out infected branches and fertilize to maintain tree health.

Verticillium wilt attacks *Koelreuteria*. The disease causes wilting and death of leaves on infected branches. Eventually the entire tree may be killed. Fertilize to stimulate growth. There are no chemical controls.