



# Acer palmatum

*Acer palmatum*, commonly known as palmate maple, Japanese maple or smooth Japanese-maple (Japanese: *irohamomiji*, イロハモミジ, or *momiji*, 紅葉), is a species of woody plant native to Japan, China, Korea, eastern Mongolia, and southeast Russia. Many different cultivars of this maple have been selected and they are grown worldwide for their large variety of attractive forms, leaf shapes, and spectacular colors.

## Description

*Acer palmatum* is a deciduous shrub or small tree reaching heights of 6 to 10 m (20 to 33 ft), rarely 16 metres (52 ft), often growing as an understory plant in shady woodlands. It may have multiple trunks joining close to the ground. In habit, it is often shaped like a hemisphere (especially when younger) or takes on a dome-like form, especially when mature. The leaves are 4–12 cm long and wide, palmately lobed with five, seven, or nine acutely pointed lobes. The flowers are produced in small cymes, the individual flowers with five red or purple sepals and five whitish petals. The fruit is a pair of winged samaras, each samara 2–3 cm long with a 6–8 mm seed. The seeds of *Acer palmatum* and similar species require stratification in order to germinate.

Even in nature, *Acer palmatum* displays considerable genetic variation, with seedlings from the same parent tree typically showing differences in such traits as leaf size, shape, and color. Overall form of the tree can vary from upright to weeping.

Three subspecies are recognised:

- *Acer palmatum* subsp. *palmatum*. Leaves small, Lower altitudes throughout central and southern Japan (not Hokkaido).
- *Acer palmatum* subsp. *amoenum* (Carrière) H.Hara. Leaves larger, Higher altitudes throughout Japan and South Korea.
- *Acer palmatum* subsp. *matsumurae* Koidz. Leaves larger. Higher altitudes throughout Japan.

## Cultivation and uses

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*Acer palmatum* has been cultivated in Japan for centuries and in temperate areas around the world since the 1800s. The first specimen of the tree reached England in 1820.

For centuries Japanese horticulturalists have developed cultivars from maples found in Japan and nearby Korea and China. They are a popular choice for bonsai enthusiasts and have long been a subject in art.

Preparations from the branches and leaves are used as a treatment in traditional Chinese medicine.

### Growing conditions

*Acer palmatum* includes hundreds of named cultivars with a variety forms, colors, leaf types, sizes, and preferred growing conditions. Heights of mature specimens range from 0.5 m to 25 m, depending on type. Some tolerate sun, but most prefer part shade, especially in hotter climates. Almost all are adaptable and blend well with companion plants. The trees are particularly suitable for borders and ornamental paths because the root systems are compact and not invasive.

### Cultivars

Over 1,000 cultivars have been chosen for particular characteristics, which are propagated by asexual reproduction most often by grafting, but some cultivars can also be propagated by budding, cuttings, tissue culture, or layering. Some cultivars are not in cultivation in the Western world or have been lost over the generations, but many new cultivars are developed each decade. Cultivars are chosen for phenotypical aspects such as leaf shape and size (shallowly to deeply lobed, some also palmately compound), leaf color (ranging from chartreuse through dark green or from red to dark purple, others variegated with various patterns of white and pink), bark texture and color, and growth pattern. Most cultivars are less vigorous and smaller than is typical for the species, but are more interesting than the relatively mundane species. Cultivars come in a large variety of forms including upright, broom, weeping, cascading, dwarf, and shrub. Most cultivars are artificially selected from seedlings of open-pollinated plants, purposeful breeding is not common, and less often from grafts of witch's brooms.

In Japan, *iromomiji* is used as an accent tree in Japanese gardens, providing gentle shade next to the house in the summer and beautiful colors in autumn. Many cultivars have characteristics that come into prominence during different seasons, including the color of new or mature leaves, extraordinary autumn color, color and shape of samaras, or even bark that becomes more brightly colored during the winter. Some cultivars can scarcely be distinguished from others unless labeled. In some cases, identical cultivars go by different names, while in other cases, different cultivars may be given the same name.

A number of cultivar groups have been naturally selected over time to such an extent that seedlings often resemble the parent.

### Similar species

The term "Japanese maple" is also sometimes used to describe other species usually within series *Palmata* that are similar to *A. palmatum* and are native to China, Korea or Japan including:

- *Acer duplcatoserratum* (syn. *A. palmatum* var. *pubescens* Li)
- *Acer japonicum*—Downy Japanese maple
- *Acer pseudosieboldianum*—Korean maple
- *Acer shirasawanum*—Fullmoon maple
- *Acer sieboldianum*—Siebold's maple
- *Acer buergerianum*—Trident maple

Given that these maples are phenotypically variable within each species, and may hybridise with one another, distinguishing between them may be a matter of gradient speciation. In commercial propagation, *A. palmatum* is often used as rootstock for many of these other species.