

Japanese Maple (*Acer palmatum*) - Bonsai Species Guide by Ian Barnes

Acer palmatum are deciduous small trees and shrubs, with opposing odd-numbered (anything from 5-11) pointed leaves, native to Japan, China and Korea. There are hundreds of varieties in cultivation. They are very popular for use as bonsai due to their ready ability to respond to most bonsai techniques, beautiful foliage and graceful branch structure.

Acer palmatum owes its botanical name to the hand-shaped leaves with, in most cases, five-pointed lobes; palma is the Latin word for the palm of the hand.

Across the range of the species there is much variation in growth habit, leaf size, leaf shape and spring, summer and autumn colour. Varieties with a green summer leaf colour tend to be more robust whilst red-leaved varieties (though arguably more beautiful) lack the same quantities of chlorophyll in their leaves and are weaker. Flowers and fruit tend to be insignificant and easily overlooked. The flowers stand in clusters, appear in late-spring to early-summer and develop into maple seeds shaped like little paired winged nuts which float to the ground like propellers when mature. The bark of younger trees is normally green or reddish and turns light grey or greyish brown with age.



The main problem with looking after *Acer palmatum* is keeping the very thin leaves free of blemishes as they are easily burnt by the sun and wind.

Bonsai Cultivation Notes

Position:

The Japanese maple prefers a sunny, airy position, but keep out of direct sunlight and strong winds during the summer to protect leaves against sun and wind scorch. Good light in spring and autumn aids vigour and leaf-colour. In winter, protect against frosts.

Watering:

Acer palmatum are very thirsty prior to new flushes of growth in spring and summer and will need additional water. A Japanese maple in a bonsai pot must be watered daily in most cases during the growth season, maybe even several times a day during the hottest days, if the soil is well-drained and the tree healthy and vigorous.

Feeding:

Feed weekly with high nitrogen fertiliser as soon as leaf buds open in spring, to encourage strong growth and to strengthen leaves against sun and wind scorch. Withdrawing some early fertilising produces very short internodes and finer growth required on "finished" or developed trees. After hardening off, feed fortnightly with a balanced feed.

Pruning:

Unless extension is required to form new areas of foliage or branches, cut new growth back to one or two pairs of leaves following bursts of growth through the growing season.

Mature bonsai with a delicate ramification can be pinched in order to keep the twigs thin. After the first leaf pair has unfolded, remove the soft little tip of the shoot between them. This method weakens the tree in the long run and should be applied specifically and thoughtfully. Remove all growth with long internodes.

Leaf pruning (the removal of leaves during the growing season) can be done every other year in early summer to encourage smaller leaves, better ramification and stronger autumn leaf colour. Remove all the leaves, leaving the leaf-stems (petiole) intact. However, defoliation should only be carried out on healthy trees, never in the same year as repotting, never 2 years running and never on weaker red-leaved varieties. Partial leaf pruning is gentler. You do not remove all the leaves, but only the largest and closely spaced ones or you remove the leaves in the strongest areas of the tree. Partial leaf pruning can be done each year as it does not stress the tree as much as total leaf pruning.

Hard-pruning and formative pruning should be carried out in autumn after leaf-fall (preferably within 1 week) or during the mid-summer semi-dormant period when wounds can heal very quickly. Never prune during spring as all *Acer* species have a habit of bleeding profusely which can severely weaken the plant or even result in the loss of branches. Ensure all wounds are sealed (the Japanese maple is vulnerable to some fungal diseases which can enter through wounds). For trees that are displayed for their bare winter silhouettes, summer pruning might be considered.

Wiring:

Wiring can be carried out at any time from early-spring to late-autumn though each period carries its own advantages and disadvantages. Optimally, wiring should be carried out on bare branches before bud extension in spring, after leaf-cutting in mid-summer or after leaf-fall in autumn. At these points in the year the branch structure is not obscured by foliage and there is enough sap remaining in the branches to keep them supple.

Spring wiring should be carried out with care as the new buds can dislodge very easily and wire can quickly start to mark the bark after the rapid growth of spring. Trees wired after leaf-fall in autumn should be protected against heavy frosts as branches will not heal properly until the spring growth period.

During the winter, branches become exceptionally brittle and can snap without warning; only very gentle wiring should be attempted.

Repotting:

Every 1 or 2 years as buds extend in spring until the tree is over 10 years, then as necessary, in a well-drained soil mix. The Japanese maple prefers a neutral or slightly acid pH-value.

Propagation:

The Japanese maple can be propagated by seeds or cuttings in summer. Sow seed as soon as ripe. Cuttings strike easily but can have a high failure rate and can take 2 or 3 seasons to grow vigorously. Air -layers are the principal source of propagation and should be carried out as soon as spring growth hardens off.

Pests and diseases:

The Japanese maple is quite a sturdy tree species. But in spring it is often affected by aphids, scale insects, caterpillars. Use an insecticide spray.

Verticillium wilt is a fungal disease which can provoke partial or total dying of the Japanese maple. On fresh cuts you can see black spots in the wood. The disease is hardly treatable and other trees can be infected via your bonsai tools. You should clean and disinfect your tools if Verticillium is suspected.

Plants weakened by lack of fertilising, poor root systems, repotting, under- or over-watering, lack of dormancy, are more likely to suffer burnt leaves.

Styles:

All forms except literati, in small to extra-large sizes.

Additional information:

There is much variation in the height and spread of the different Japanese maple cultivars. Leaf size varies greatly but in all varieties produces vibrant spring and autumn colouring. The "basic" *Acer palmatum* is sometimes referred to as the "Mountain Maple" and is probably the strongest and most vigorous Japanese maple. All red-leaved cultivars are more susceptible to leaf damage in the spring (before the leaves harden) from strong sun, winds or frost.

However, all will start to lose their red pigmentation if kept in deep shade for more than a few days. Red-leaved varieties are naturally weaker and slower growing than green-leaved cultivars as they lack the same quantities of chlorophyll in their leaves.

Some varieties of *Acer palmatum* have variations in growing area dominance. Shrubby varieties are basally dominant and, unless care is taken when pruning, can have very sparse apices.

Suitability for very hot climates is questionable; in extreme summer temperatures there can be an endless struggle to keep the leaves in good condition or even intact on the tree. *Acer palmatum* also require a dormant period (winter temperatures of less than 10°C for at least 44 days). Trees can survive a few seasons without a dormant period but lose their vigour and this can lead to their eventual demise.

Acer palmatum are very suitable for "thread" and "approach" grafting of new branches and new roots.

Avoid grafted nursery trees often seen for sale in garden centres (one *Acer palmatum* variety grafted on top of a more vigorous understock trunk). Only purchase grafted nursery trees grafted specifically for bonsai with a very neat graft low down on the trunk.

Japanese Maple (Acer palmatum) Developmental Techniques

Trunk Thickening and Branch Development

To thicken the trunk, allow the branches to grow unencumbered. However, if you allow the branches to grow freely, the inner buds and leaves will be shaded and become weaker and weaker. One year's growth, if left untrimmed, aids in thickening the trunk, but after a year, the tree reaches its limit and must be trimmed back. So, cut branches back to inner buds and allow the branches to flush out again next year.

This process redirects energy to the weaker buds. Note that cutting back flush to the buds will weaken them; leave a small stub at the base of each cut.

Cut strong branches back to the softer branches. Don't leave vertical branches/buds; cut to promote horizontal growth. While you generally don't want to leave vertical branches, if the branch is thin, you can wire it in the summer to be horizontal.

Branch removal

In order to create delicate branching for fine winter silhouettes, large branches should be removed annually in late-winter or early-spring. As branches age, they naturally thicken and must be eliminated. The trimming process involves identifying both branches for removal and those that will replace them in the design.

When large branches are removed, the remaining wounds must be properly cleaned to promote smooth, less visible scarring.



Large branch removed.



Remaining wound properly cleaned up.

Soft branches are very important to the design, so to strengthen them, remove the strong branches. This creates softer branching.

For example, assume you have a strong upward growing branch and a lower soft branch growing horizontally. If you leave the strong branch, it will simply get all of the energy and the other branch will weaken. The stronger branch will become thick and ugly. Therefore, remove the strong, upward growing branch. This will allow sunlight to enter and the lower branch will strengthen.



Remove the strong, upward growing branch.



The remaining fine branching can be wired into place.

In addition to removing large, unsightly branches, the remaining fine branching must also be pushed back to maintain the tree's size and silhouette. Remove the strong branches, creating softer branching, then use wire to shape it.



Cut fine branching back to two buds.



Use wire to shape the remaining softer branching.

Wiring

After branch removal, the remaining branches must be wired to create the desired overall shape and design.

While Japanese maples are notorious for quickly scarring due to wire application, by wiring in late-winter and removing the wire by the first part of the summer, scarring can be avoided and the branches will likely set during this short period.

Branches should be wired to their tips, looping the wire underneath at the ends. This allows for better control during shaping.



Wire branches to their tips.



Loop the wire underneath at the ends.

First, wire the main branches, followed by the secondary and in some cases, the tertiary branches. You don't have to wire every single branch; the smallest branches will likely die if they are wired. To make the pad more uniform, bend the main branches and use a slight twist to level out the small twigs. Put movement in the branches that are wired, then with a slight twist, level out those twigs that are not wired. Flat pads are created.



Bend the main branches and use a slight twist to level out the small unwired twigs.



Flat pads are created.

Defoliation

Trim Japanese maples as they leaf-out in the spring. The goal is to show them in the winter, when they don't have any leaves. So, trim in spring to ramify branches for winter exhibition.



Remove new shoots back to the first pair of leaves. This stops the growth for the year and creates a better ramified branch pattern. Perform this technique each year, for overall maintenance and development of Japanese maples.



Remove new shoots back to the first pair of leaves.



As a ramified branch pattern is created over time, the canopy will thicken to the point where the weak inner buds will not receive enough light and air and will eventually die off.



A full canopy prevents light and air reaching weak inner buds, which will eventually die.

In late-spring, to help prevent such die-back, remove one leaf in each pair on the outer canopy of the entire tree. This is not harmful to Japanese maples as it will not induce a second flush of growth.



Remove one leaf in each pair on the outer canopy.

If the canopy is still too full, the remaining leaves may be folded and cut on an angle, which will allow about 50% more light to reach the inner buds.



Leaves may be folded...



... and cut on an angle.

This will allow 50% more light to reach the inner buds.

If these techniques are not performed on a yearly basis, the inner buds and leaves will die off, making it difficult to maintain the overall size of the bonsai over a long period of time. However, if the techniques are performed, back-budding will occur, at which point the branches may be cut back to reduce or maintain the overall size of the tree.



Defoliated canopy, allowing light and air to reach the weak inner buds and balance the energy of the tree.

These techniques may also be applied to Japanese maple cultivars.

