



The Art and Science of Pruning

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Pruning is a crucial practice for maintaining the health and aesthetics of your landscape plants. It's both an art and a science. The artistic aspect comes into play when you prune to enhance the landscape's beauty, while the scientific side involves understanding how, where, when, and why to trim plant tissues. In this article, we explore how applied plant physiology can guide you in proper tree and shrub pruning. The methodology for pruning is extensive, but we will focus on techniques that respect a plant's natural growth patterns. You'll discover that correct pruning not only beautifies your landscape but also reduces the need for continuous maintenance.

Why Prune?

Homeowners often prune to control the size of trees and shrubs, but it's essential to understand that a plant's size is influenced by genetic and environmental factors. Frequent, heavy pruning can deplete a plant's resources and make it vulnerable to pests and diseases. If a shrub needs frequent pruning to control its size, it might be better suited in a different location. Another reason for pruning is to train young trees, addressing potential issues early. However, formal pruning techniques like topiary and bonsai should be left to experts.

Pruning can also contribute to a plant's health and vigor by removing competing leaders, dead, damaged, or diseased branches, and branches that rub against each other. Safety is another key reason for pruning, as disease or structural issues in limbs and trunks may require removal. It's crucial to choose tree and shrub species carefully to prevent problems with aggressive roots or hazardous crowns.

When to Prune

The timing of pruning can significantly impact a plant's growth. Natural target pruning, also known as selective pruning, ensures that the plant retains its natural form. It stimulates dormant buds, with the location of the stimulation depending on the cut's placement. Heading cuts, on the other hand, should be avoided as they often result in unsightly stubs and the potential for water sprouts. Heading cuts are suitable for enhancing flowering and for species with terminal shoots.

Thinning cuts, which remove branches back to larger ones or the trunk, maintain a plant's natural growth pattern without causing water sprouts. They can also be used for crown cleaning and to transform shrubs into tree-like shapes.

Pruning at different times of the year has varying effects on regrowth. Late fall and winter are the best times for pruning, as there are fewer pests and diseases, and it stimulates regrowth. Spring pruning can dwarf a plant's growth and may lead to "bleeding" in some species. Summer pruning results in little regrowth, making it suitable for removing water

sprouts and suckers. Late summer and fall pruning is generally discouraged, especially for plants from less temperate climates.

The costs and benefits associated with pruning during different seasons of the year are as follows:

1. Late Fall/Winter (Best Time for Pruning): Pruning during late fall and winter, when plants are dormant and shedding leaves, is optimal from a physiological perspective. At this time, there are fewer pests and diseases to contend with. The deciduous species' branch structure is also more visible during this period. Moreover, you can avoid disturbing nesting species. Pruning during late fall and winter tends to stimulate regrowth, making it the best time for overall plant health. However, it's advisable to avoid pruning in regions with harsh climates, as freezing temperatures can cause damage.

2. Spring (Least Favourable for Regrowth): Spring is considered the least favourable season for regrowth. Pruning during this time can be beneficial if you aim to dwarf the size of a tree or shrub. However, it's essential to note that spring pruning can lead to "bleeding" in some species. This occurs as growth resumes, and the xylem and phloem are actively transporting water, nutrients, and carbohydrates, resulting in a plant appearing as if it's bleeding.

3. Summer (Little Regrowth, Species-Dependent): Pruning in the summer generally results in limited regrowth, but the outcome varies depending on the plant species. This season is ideal for removing water sprouts and suckers, provided that it suits the specific species.

4. Late Summer/Fall (Least Recommended Time for Pruning): Late summer and fall are the least recommended times for pruning. This is especially true for plants originating from less temperate climates than your own, as pruning during this period can stimulate new growth that will be vulnerable to damage by upcoming freezing temperatures. Additionally, this is a physiologically sensitive time when plants enter dormancy.

Regardless of the season, there are some key guidelines to keep in mind:

- Pruning can be performed at any time of the year to remove dead, diseased, or damaged branches, water sprouts, suckers, and co-dominant leaders.
- When dealing with older trees, be conservative in your pruning approach, as they become less resilient with age.
- Pay attention to flowering patterns; for example, trees that bloom in the spring typically form their buds in the fall. Pruning after bud formation can result in a lack of flowers in the spring, as they flower on the previous year's growth.
- Avoid pruning immediately after transplanting, as it stimulates crown growth, whereas the plant's resources should be directed toward root development.

How to Prune

Proper pruning requires the right equipment, including hand pruners for small branches and a pruning saw for larger ones. It's essential to keep your cutting tools clean to prevent disease spread, using noncorrosive household disinfectants for this purpose.

When making cuts, focus on the branch collar, a raised and rough area where branches meet the trunk or other branches. Never cut into the branch collar; instead, make parallel cuts just above it. The amount of foliage to remove depends on the species, age, and environmental conditions, with a general rule of no more than 25 percent per year. Avoid excessive pruning, as it encourages water sprouts and suckers.

Conifers have fewer dormant buds than angiosperms, making careful pruning crucial. Loppers should be avoided for precise pruning, as they are better suited for cutting larger branches already trimmed with a pruning saw.

Wound treatments are often marketed, but trees naturally seal wounds with callus tissue. Avoid wound paints, as they interfere with the natural sealing process. Smaller cuts are preferable, as larger wounds take longer to heal.

In conclusion, pruning is both an art and a science, with proper timing and technique being essential for plant health and aesthetics. Understanding when and how to prune can help you maintain a thriving and attractive landscape.