

Penn State **Extension**

Pruning Ornamental Plants

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INTRODUCTION

Proper ornamental plant care begins with selecting the right plant for the right place, exercising proper care in site preparation and planting, and establishing timely and appropriate maintenance. Pruning is necessary to maintain a healthy and vigorous tree or shrub. However, pruning is *not* a way to fix poor planning and placement of a tree or shrub. If you find that pruning is needed every season to keep a specific plant within your predetermined bounds, you should consider removing the plant and replacing it with another that has growth characteristics better suited to the site limitations.

Pruning is both the art and science of removing plant parts (for example, branches, stems, roots, buds, leaves, flowers, and fruit) for a specific purpose. The science involves the understanding of the plant's biological response to pruning, while the art involves understanding the plant's natural form and shape. With few exceptions, most plants in the landscape should be examined annually to determine pruning needs. Too often, pruning is ignored for several years and then some trees and many shrubs become overgrown, weak, and require drastic pruning to return them to a healthy, safe, vigorous, attractive, and useful condition. Many homeowners regard pruning with apprehension, which often leads to neglected and overgrown plants. This apprehension is often connected to one of the many myths and misconceptions about pruning.

PRUNING MYTHS

- *“Pruning is difficult.”* Pruning is straightforward and requires a little knowledge about how plants grow and respond to pruning, a little care, an eye for the plant’s form, and a vision for what the plant should look like when the process is complete.
- *“Topping shade trees will keep the trees from causing damage to the house.”* Commonly recited by people who have recently topped their trees, this misconception leads to new weak shoots that will be more likely to split off and cause damage. An abundance of misdirected branches will increase the density of the tree canopy, thus placing greater wind pressure on the tree and increasing the shade below the tree, which may shade out the lawn. These weak new shoots will require removal every few years. In addition, wood decay is more likely to spread into branches that were topped or headed back, resulting in poorer tree health and greater likelihood of future limb breakage.
- *“Most trees need pruning.”* In fact, mature trees seldom need pruning since they require most of their leafy canopy to make food for the whole tree. On the other hand, young trees usually benefit from pruning to establish a basic branch structure and improve their form.
- *“All shrubs can be pruned with hedge shears.”* Hedge shears are intended for shaping hedges only! Using them on shrubs not intended to be hedges destroys the natural grace, form, and beauty of the plants. Hedge shears often leave stubs that die back. Improperly used and dull shears tear leaf tissue rather than cutting it cleanly, leaving brown leaves and leaf edges.
- *“Anyone can prune.”* Anyone interested can learn how to prune properly. However, if you are hiring someone to prune, hire a professional. For trees, hire a certified arborist. For shrubs and small trees, hire a qualified horticulturist. In either case, before you hire them ask for references, proof of certification by the International Society of Arboriculture (ISA), and examples of their work.
- *“Tree paint will protect and help cuts.”* Research indicates that there is little value in treating pruning

cuts with tree wound dressing. Tree paint, especially oil-based paint, inhibits wound closure and may increase decay of inner wood.

Most gardeners can easily care for their plants once they understand what constitutes proper pruning technique and when pruning should occur. Correct pruning is an essential maintenance practice for trees and shrubs in the landscape. Successful pruning begins with (1) knowing why you are pruning, (2) understanding how pruning affects the plant, (3) pruning at the proper time for the plant, and (4) following proper techniques and using proper tools.

IMPACT OF PRUNING

Before you begin pruning or any form of cutting of your plants, you need to consider what you are attempting to accomplish with the operation. You should also consider the properties of the individual plant: its natural form, habit of growth, rate of growth, height, spread, and time of flowering. After considering all these factors, you can begin pruning. For example, a fast-growing shrub such as forsythia might be pruned harder than a slow-growing one, and if flowers are of value you will want to prune after the flowering period. Finally, plants that are pruned can generally go longer without subsequent attention and retain their form and beauty longer than plants that are sheared.

Pruning is an invigorating process. Pruning promotes growth by releasing a plant’s internal chemical controls, allowing new branches to grow. Many people prune with the desire to reduce a plant’s size. This is one of the most abused and misunderstood reasons to prune. The most common example of pruning is the poorly planned and executed hair-cutting approach to pruning (Figure 1). In an effort to “shorten” a plant, a person indiscriminately cuts all branches evenly, leaving large stubs or poorly placed lateral buds at the end of the cut branches. This form of “hair-cutting, topping, or rounding” results in the following problems:

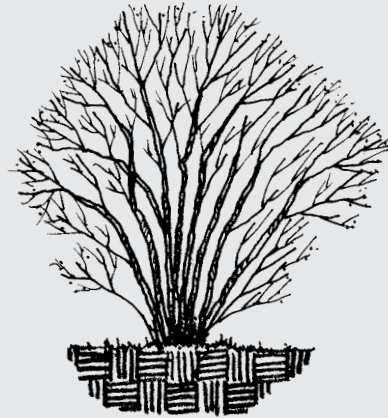
- Leaves the plant open to rot and insect infestations at branches with stub-ends
- Releases all of the internal control that a plant has over new growth, allowing indiscriminate

growth from lateral buds up and down the cut branches

- Creates weak top growth on the outside edge of the plant that breaks readily in storms
- Shades the interior of the plant, causing internal leaf drop
- Weakens lower branches carrying the load of the excessive top growth
- Reduces flowering and fruiting
- Destroys the plant's overall structure and natural form

In addition, plants pruned in this fashion require more frequent future pruning and are very difficult to retrain into a natural form. This can be avoided by (1) understanding the site chosen for a plant and the growth habit of the plant prior to planting and (2) understanding and using the proper pruning methods to assure healthy, safe, and controlled growth of the trees and shrubs into which you have invested money, time, and energy prior to placing them in your landscape.

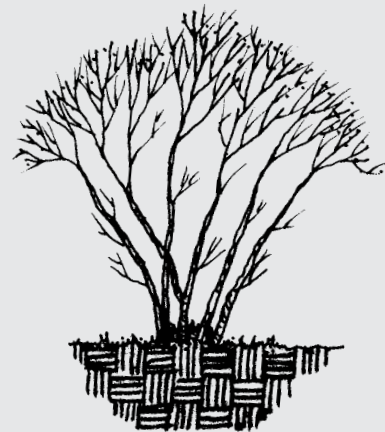
Plant architecture and plant names often confuse novice pruners and can result in poorly pruned plants. In most cases, the structure of a shrub is such that new branches, stems, or canes arise from a central crown or collar of the plant. The crown or collar is usually near the soil line and new shoots may arise out of the soil rather than off of an existing trunk. Common pruning techniques such as rejuvenation or renewal pruning take advantage of this collar region and the routine development of new shoots from the collar. However, some plants considered shrubs by their stature and use, such as burningbush (*Euonymus alata*), actually have the architecture of a tree. Looking carefully at burningbush, you will see either a multitrunk main stem or a single trunk with branches arising off of the trunk similar to that of a tree. In cases like this, the technique chosen to prune this plant is that of pruning a small tree. Carefully considering the structure of the plant to be pruned will prevent choosing the wrong technique.



(a)



(b)



(c)

Figure 1. Old flowering shrubs (a) are commonly pruned using improper heading cuts (b) without consideration for where the cut is made on the stem or future growth resulting in the new growth arising near the tips of the cut branches (c).

REASONS TO PRUNE

1. *To maintain the health of a plant by removing dead, diseased, damaged, decayed, or insect-infested parts.* Good sanitation helps keep the rest of the plant clean. Deadwood in a plant is a food source for decay organisms such as fungi.
2. *To protect the structure of a plant by removing crossing, rubbing, broken, weak, overcrowded branches.* This would include pruning to remove storm, animal, or mechanical damage that may occur to a tree or shrub.
3. *To prevent damage to property and increase personal safety.* Pruning can minimize the potential hazards caused by limbs interfering with power lines, branches overgrowing structures, weak limbs breaking in strong winds or under heavy ice and snow loads, and branches and plants that obscure and block visibility along roadways, street corners, sidewalks, and driveways.
4. *To control the size and shape of a plant.* Applied properly this reason can be effective in enhancing the plant's overall health and form (e.g., pruning to open a plant to more sunlight or to allow greater air movement through the plant). Selectively pruning to direct future growth reduces future pruning to protect structure.
5. *To rejuvenate an old, declining plant in order to increase flowering and fruiting and to enhance winter twig color.* Pruning out all older wood on many shrubs will stimulate the growth of new wood. The newer wood should have more flowers and a better form.
6. *To develop a special shape or form, as in hedges, espaliers, and topiary work.* Shearing is used more than pruning for creating particular artificial shapes.
7. *To remove dead flower clusters and developing seed pods.* On shrubs such as rhododendron, pieris, and lilac, the seed pods develop at the expense of the next season's flower buds. Therefore, the seed pods should always be removed unless they have a specific ornamental value. Frequently, when the seed pods are not removed there is a cyclic pattern to the flowering. In such cases the flowers are generally better every other season.
8. *To prepare a plant for transplanting, induce a plant to flower and fruit, or to restrict an aggressive plant's growth rate.* For this, root pruning is a useful

technique. Root pruning is the cutting of the root system. Plants that are scheduled to be transplanted benefit from a root pruning one year before transplanting. Such pruning helps to develop a more compact root system with more roots in the ball of soil that is moved with the plant.

PRUNING TOOLS

As with any job, choosing the correct tools for the job will usually produce better results; the same is true for pruning. A variety of tools are available, and selecting the right one for the job is important. Of equal importance is matching the right tool to the type of pruning you are going to do; do not attempt to cut parts larger than the capacity that the tools can accept. Tools should be of the highest quality you can afford, and they should be sharp. Keep them in good condition by lubricating them regularly, cleaning them to prevent rust, and only using them for their intended function.

When pruning specifically to remove diseased plant parts, it is best to alternately use two tools so that one can soak in a disinfectant, such as 70 percent rubbing alcohol or 10 percent bleach solution, while the second tool is in use. Alternatively, a disinfectant can be carried in a squeeze, spray, or mist bottle. Thoroughly wet the cutting surfaces with the disinfectant and allow the tool to drain and air-dry. If sap or resin builds up on the tool, scrub this off with a rag kept in the disinfectant. Then dip, pour, or spray more disinfectant onto the tool. Let it drain and air-dry or let it soak in the disinfectant for 10 minutes. Tools treated with a disinfectant will dull more rapidly and require sharpening more often. Monitor blade sharpness and sharpen as needed to avoid jagged pruning cuts or tearing tissue during pruning.

Hand pruners

Also known as hand clippers, these are a standard for any pruning tool collection. Hand pruners come in several shapes to suit a variety of cutting operations and sizes from 6- to 9-inch handles (Figure 2). Hand pruners are useful in cutting branches up to $\frac{1}{2}$ to $\frac{3}{4}$ inch in diameter. Hand pruners come in scissor-action (bypass) or blade and anvil types. The blades of both tool types will dull with use and require sharpening.

A dull blade on the blade and anvil tool will result in crushing rather than cutting tissue and care should be taken to prevent crushing of cut ends as it inhibits callusing and opens the branch up to other problems. In addition, the soft metal anvil on the blade and anvil type will require replacing over time.

Lopping shears

Two-handed pruners ranging in sizes of 16- to 30-inch handles used for heavy-duty cutting branches (up to 1½ inch in diameter) (Figure 2). Operating on the same principle and with the same styles as hand pruners, the long handles of lopping shears provide greater leverage for cutting. In choosing loppers, strength for cutting combined with light weight is critical to allow for extended use.

Pruning saws

Commonly used on branches over 1 inch in diameter (Figure 2), pruning saws come in a variety of sizes and shapes depending on the type of cutting to be done, blade types to facilitate cutting, and styles for easy handling, such as fold-up and climber's saws. Pruning saws with slightly curved high-quality steel blades are the most reliable. Most pruning saws cut on the pull stroke for greater ease and safety. Saws with 8 to 10 teeth per inch will give a fairly smooth final cut to larger stems. Bow saws are available for pruning, but their design does not lend itself well to interior cutting and are thus difficult to use in many situations. Chain saws are dangerous to use for pruning. Instead, for very large pruning cuts or to remove small trees, select a hand pruning saw with very coarse teeth. Chain saws are best used for cutting up limbs already pruned or removing dead plants.

Pruning knives

Pruning knives or sharp pocket knives can also be useful for pruning summer growth on trees, shrubs, and roses. They are best used on soft and tender growth. Knives can also be used to trim and smooth saw cuts where a coarse saw was used to remove very large limbs or storm damage.

Pole pruners

Also called pole saws, these tools are for pruning branches beyond arm's reach, such as on shade and ornamental trees and very tall shrubs. Most pole pruners have a lever-action cutting mechanism in the form of a hook for cutting branches up to about 1 inch in diameter. For larger branches, a saw attachment is available to attach to the pruning head. A take-apart handle makes storage easier. Exercising caution with pole pruners near utility lines is a must. Metal handle pole pruners are not safe for use near utility lines. Calling an arborist certified in working near utility lines is the safest decision.

Hedge shears

Intended specifically for the care and maintenance of hedges (Figure 2), hedge shears are designed to remove large quantities of new growth in a single cut in order to create formal shapes. Working on a scissor action, these shears are not useful for pruning large branches or for any pruning where a natural appearance is intended. Many plants are injured each year because of the improper use of electric hedge trimmers. Often the trimmers tear leaves and branches because the operator moves across the hedge at a speed faster than the trimmer can efficiently cut. In addition, electric and manually operated hedge trimmer blades must be kept sharp to avoid tearing tissue.

PRUNING TECHNIQUES

Pruning should be done for a reason. Several basic methods are used in pruning—rejuvenation, renewal, heading, and thinning. Your choice of methods should be based on three factors: (1) your goals for pruning, (2) the type of plant you are pruning, either tree or shrub, deciduous or evergreen, broad-leaf evergreen or needle leaf evergreen, and (3) the size of plant you are pruning. Most damage and plant loss is caused by not having a goal, not understanding the architecture of the plants being pruned, not planning before cutting, improperly employing a technique, and choosing the wrong technique(s) for the situation.