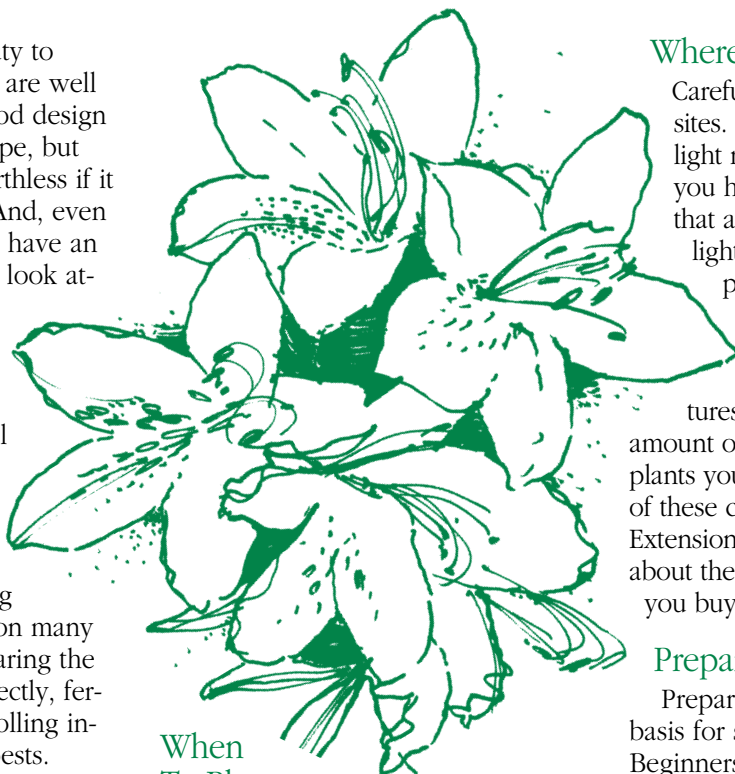


Care and Maintenance of Landscape Plants

Shrubs and trees add beauty to grounds and homes if they are well placed and cared for. A good design is important in any landscape, but even the best design is worthless if it isn't properly maintained. And, even some landscapes that don't have an especially good design can look attractive if they are given a little extra care. The environmental conditions in Alabama make it possible to grow healthy ornamental plants throughout the state. The many beautiful gardens and yards over the state prove this fact. Success in growing landscape plants depends on many things. These include preparing the soil properly, planting correctly, fertilizing, pruning, and controlling insects, diseases, and other pests.

How To Plant Trees And Shrubs

Successful landscaping involves learning how to properly plant your shrubbery and trees. Taking just a little extra time to study planting procedures may save a considerable amount of time and money later on. In order to have a healthy landscape and reduce maintenance, you must have a good design, proper site, proper planting, and good follow-up care. Here are some important methods for you to learn and remember.



When To Plant

Even though most landscape plants can be planted any month during the year, the ideal planting season begins in October and continues until new growth appears in the spring. Early fall planting is most desirable. Roots grow during fall and winter months, enabling them to become established before warm weather and spring growth. Plant deciduous trees and shrubs (those that lose their leaves in the fall) after they become dormant (November to January).

Shrubs and trees grown in containers may be planted throughout the spring and summer if plants are watered properly. With extra care, balled and burlapped plants can be planted in spring and summer, but the risk of the plants dying increases.

Where To Plant

Carefully consider your planting sites. Pick a place that meets the light requirements for the plants you have chosen or select plants that are adapted to the level of light received in the area to be planted. Remember to consider other environmental factors such as typical wind velocity, temperatures, soil characteristics, and amount of rainfall. Make sure the plants you choose will adapt to each of these conditions. Ask your county Extension agent or nursery manager about the requirements of the plants you buy.

Preparing The Soil

Preparing the soil properly is the basis for successful gardening. Beginners do not always realize how important this step is, and the ornamentals they plant often grow poorly as a result. The only way to know what nutrients your soil needs for growing ornamentals and whether the soil pH needs correcting is to test the soil. Get information and supplies for soil testing at your county Extension office.

For best results, spend the little extra money needed to buy some good organic matter, or better yet, begin collecting and preparing your own composted organic matter. Organic matter helps the root growth of your ornamentals in several ways. It loosens tight clay soils and causes loose sandy soils to hold more water for a longer period of time.

There are several good organic materials. Peat moss is ideal for most ornamentals. Ground pine bark is also

very good. Leaf mold from the woods and compost are satisfactory as well.

Sawdust is used by a number of Alabama nurseries. However, sawdust can rob the soil of its nitrogen supply. If this happens, plant leaves will turn light yellow. This discoloration can be corrected by light application of nitrogen during the growing season in addition to regular fertilization.

Peanut hulls can be bought in some areas of the state, and they may be used. However, they should be composted or treated to reduce the possibility of adding nematodes to your soil. Check with your county Extension office to find out how to treat peanut hulls.

Generally, peat moss is best to use, followed by pine bark, leaf mold, sawdust, and peanut hulls.

Planting

If you are planting a bed of ornamentals, put 2 to 3 inches of organic matter on the soil surface. Then work it in to a depth of 8 to 10 inches.

If planting a single plant, dig the hole twice the width of the root ball. Make the hole no deeper than the height of the rootball; in fact, in most soils the hole should be shallower than the height of the rootball (Figure 1A). The sides of the hole should slant slightly outward from bottom to top. For root balls greater than 2 feet in diameter, dig holes 2 feet wider than the diameter of the ball.

For individual plantings, soil amendment is not needed. After planting, the top of the ball should be 1 to 2 inches higher than ground level or even with the ground level in sandy soils.

Place the plant in the center of the hole and, using the native soil, refill around the sides one-half to two-thirds to the top of the ball. With the shovel handle, tamp the soil downward and under the ball. Lightly firm the remaining soil toward the ball with your foot. Fill the hole with water and allow it to settle. This removes air pockets (Figure 1B).

With the remaining mixture, finish refilling the hole but do not firm the soil. Apply 2 to 3 inches of mulch around the base of the plant (Figure 1C).

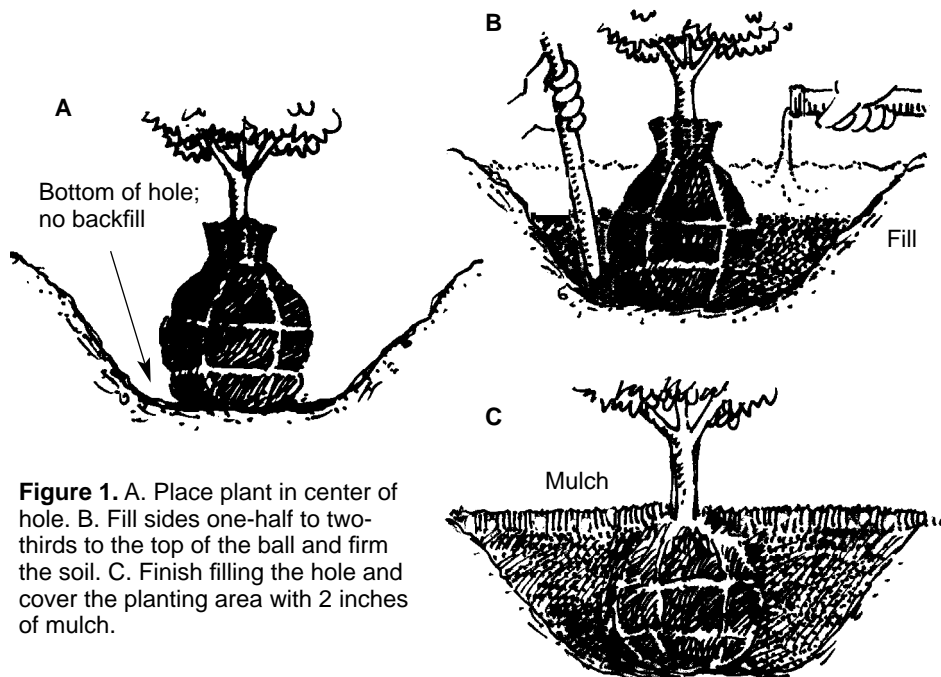


Figure 1. A. Place plant in center of hole. B. Fill sides one-half to two-thirds to the top of the ball and firm the soil. C. Finish filling the hole and cover the planting area with 2 inches of mulch.

Balled and Burlapped Plants. It is not necessary to remove the burlap from balled and burlapped plants if real, untreated burlap is used. It will decompose in a short time. However, make several slits through the burlap on the sides of the ball after the plant has been set in the planting hole so that the roots may penetrate more quickly (Figure 2A) or fold the burlap away from the ball into the bottom of the hole. Other plastic or synthetic materials do not decompose and should be dropped to the bottom of the hole. Cut strings that are wrapped around the base of the plant. Fold the top of the burlap back into the hole before adding backfill soil.

Follow these good planting steps for balled and burlapped plants.

1. Handle plant ball carefully; do not lift it by the stem.
2. Dig a hole deep and wide enough for the ball and stem (no deeper than the ball).
3. Leave burlap on the root ball or remove other material; cut rope or string at the stem.
4. Fill the hole and firm the soil gradually with your hand or foot.
5. Water thoroughly.
6. Cover area with 3 inches of mulch.

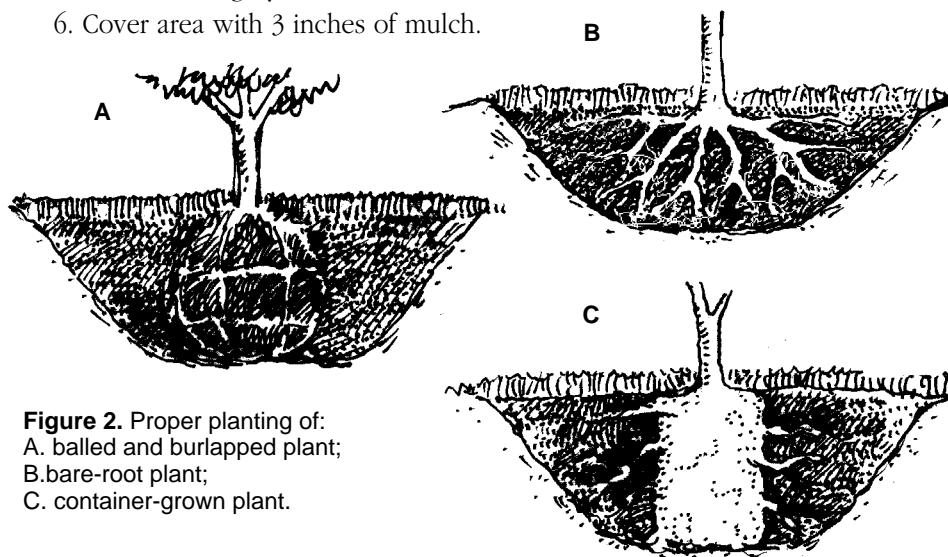


Figure 2. Proper planting of:
A. balled and burlapped plant;
B. bare-root plant;
C. container-grown plant.

Bare-Root Plants. Bare-root plants must have their roots spread out to full length to take the greatest advantage of moisture and fertilizer (Figure 2B). Transplant bare-root plants only from October through January.

Follow these good planting steps for bare-root plants.

1. Store bare-root plant in shade and keep moist until planting.
2. Remove plant from package.
3. Soak roots in water.
4. Dig a hole deep and wide enough to spread roots their full length.
5. Spread roots at 6-inch depth.
6. Fill the hole and firm the soil gradually.
7. Water thoroughly.
8. Cover area with 2 to 3 inches of mulch.

Container-Grown Plants. Container-grown plants need to be planted much like balled and burlapped plants. However, always remove the container. Container-grown plants suffer less shock when planted than other transplants do, but they are sometimes pot-bound, which means they have a mass of roots growing around the outside of the ball of soil. If you notice this when you take the plant out of the container, massage the rootball to rough up the roots and pull bottom roots to loosen the rootball slightly. This helps the roots to spread out and grow away from the original ball of soil (Figure 2C).

Follow these good planting steps for container-grown plants.

1. Handle plant by container.
2. Dig a hole twice the width of the root ball.
3. Remove the container carefully.
4. Massage the root ball to loosen mass slightly.
5. Fill the hole and firm the soil gradually with your hand or foot.
6. Water thoroughly; make sure surrounding soil is wet.
7. Cover the area with 2 to 3 inches of mulch.

8. Water every 2 to 3 days for the first 3 to 4 weeks; then be sure plants are watered about once a week.

Frequently, azaleas, boxwoods, and camellias are set too deep for proper growth—or even for survival. When these plants are “buried” in soil, they grow poorly and eventually die.

Drainage

One of the greatest drawbacks to successful gardening is poorly drained ground. Wherever water lies in the ground at a depth easily reached by the roots, cultivated plants will not survive.

Once a bed settles it needs to have good surface drainage (no standing water). Many times poor drainage can be corrected by anticipating the problem and raising the bed 2 or 3 inches to allow run-off.

Sometimes the drainage problem will be more serious, and internal drainage must be improved. Clay soil or soil overlying a hard subsoil is susceptible to water-logging. Also, low-lying land that is barely above the high watermark of a river or lake in the vicinity is subject to water-logging. If this is the case, raised beds or berms may be needed (Figure 3). In some situations, a drainage system may need to be installed.

Care for your plants promptly. Plant them at once, or keep them shaded and watered until planting.

How To Care For Landscape Plants

After your shrubs or trees are planted, there are several important things to remember. Young transplanted ornamentals need special attention the first year in their new location. Some trees may need to be staked, and all plants should be properly watered and mulched.

Staking Trees

Trees planted in open areas subject to strong winds should be staked or guyed.

Stake all trees that have a diameter of 2½ inches or less with 2- × 2-inch stakes. They should be long enough for you to drive them 2 feet into the ground and still reach mid-height of the tree. Soft twine, water hose, strips of webbing, or soft rope may be used to tie the tree to the stakes. If you use wire, pad it at the point of contact with the tree. Do not leave wire on the tree more than 1 year or long enough to cause girdling.

Guy all trees over 2½ inches in diameter with three or four guys equally spaced around the tree. Use two

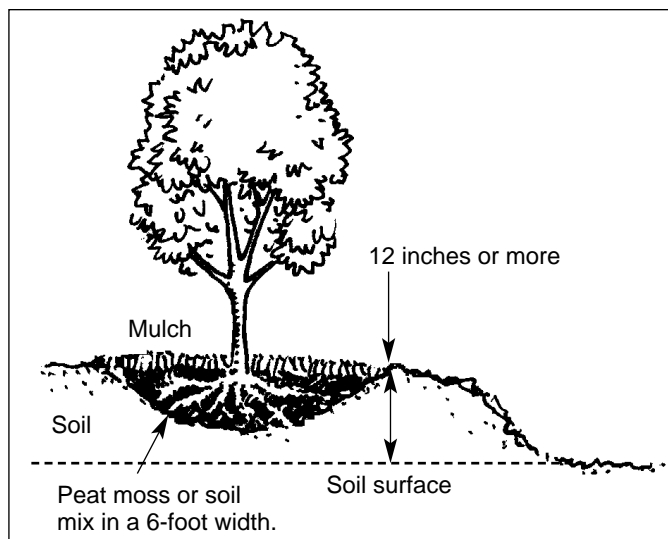


Figure 3. Example of one type of raised bed.

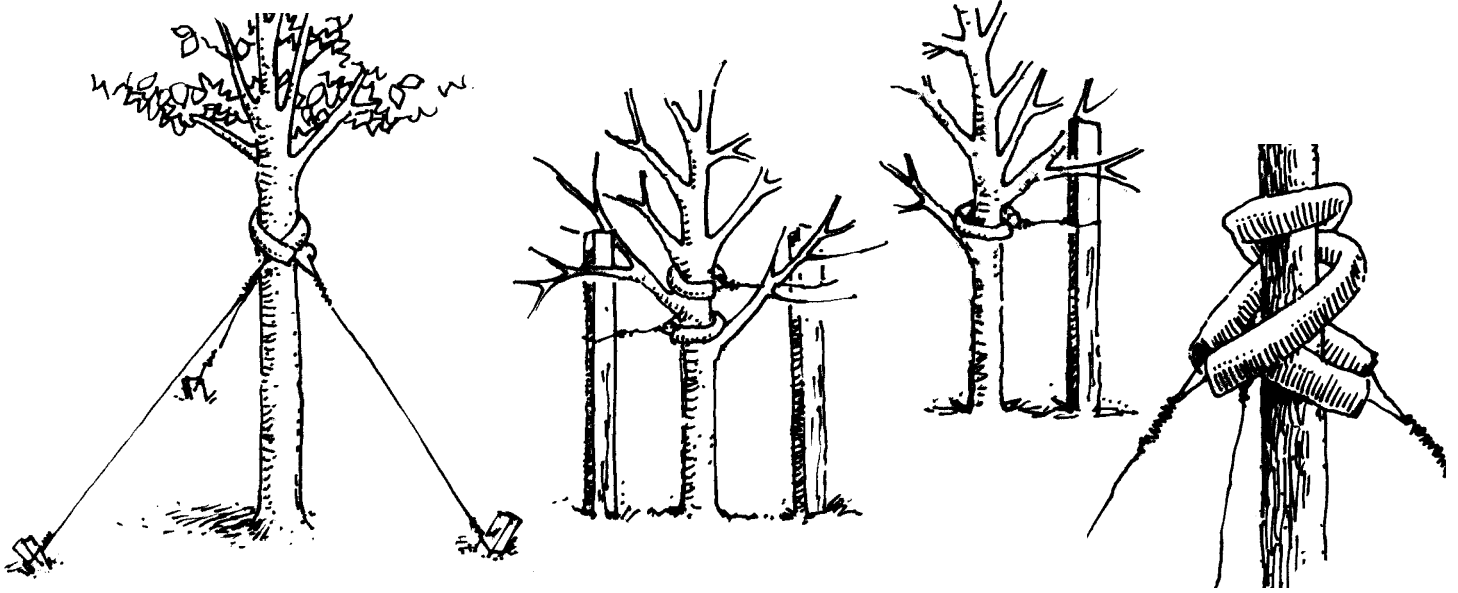


Figure 4. Ways to stake and guy newly planted trees.

strands of No. 12 wire. Cover the wire with rubber hose or heavy cloth padding at points of contact. Run wires from the trunk about 8 feet above the ground at an angle of about 45° to stakes driven in the ground (Figure 4). Trees should be staked so as to allow some movement of the trunk. Trunk movement allows the tree to increase in taper and develop a strong trunk.

Watering

Soil characteristics and condition of the plants are the main guides to watering. Under most weather conditions, one good watering, saturating the soil to a depth of 8 to 10 inches every 5 to 7 days, is enough. After the first year, most landscape plants will naturally obtain water from the soil and not need your watering. However, there are cases where extra water is needed as in periods of drought or when fast growth is desired.

When watering, keep these points in mind.

1. Apply water slowly so it can soak into the soil. A 50-foot hose and sprinkler will generally take about 2½ hours to apply the amount of water needed for a 1,000-square foot area.

2. Wet soil thoroughly to a depth of 8 to 10 inches. Light watering encourages shallow root development. Then, if the shallow watering is neglected a day or so in a sudden period of hot weather, plants may be damaged.

3. Avoid too much water; it leaches plant nutrients from the soil and may drown the plant's root system.

4. Avoid setting plants so close to a wall that the gutter or overhanging roof blocks natural rainfall.

Mulching

Mulching offers several advantages over clean cultivation (no mulch). The greatest is conservation of soil moisture. Evaporation of water from the soil is greatly reduced when the soil is protected from direct rays of the sun and moving air. Also, rain falling on the mulch does not pack the soil surface. With less crusty soil, water that is applied penetrates the soil more easily, thus erosion is eliminated.

A second important advantage of mulch is the control of weeds. Using mulch greatly reduces the need for weeding. If you also use a herbicide that kills weeds before germination, the benefit in weed control will be even greater.

Controlling soil temperatures is another advantage. High summer temperatures may injure beneficial microorganisms as well as the roots near the surface of the soil.

Maintaining lower and more uniform soil temperatures in summer will promote bacterial activity in the soil. In winter, frost penetration is less likely to occur where mulching is practiced. Evergreens must absorb moisture in the winter as well as summer. Therefore, winter mulch may prevent the soil water from freezing and becoming unavailable to plants.

Organic matter used as mulch can improve soil structure and tilth. As it decays the material works down into the topsoil. Decaying mulch also adds nutrients to the soil. Mulch is much better for the health of a plant than being surrounded by grass, which competes for nutrients and water. Grass roots are highly competitive and can stunt the root growth of desirable landscape plants.

It is especially important to mulch rather than cultivate shallow-rooted plants such as rhododendrons, azaleas, and camellias to prevent damage to roots.

Mulching material, such as pine bark or pine needles, improves the appearance of the landscape. It is

valuable for covering beds near the house or in areas where neatness is important.

These advantages of mulching far outweigh the disadvantages, but there are a few. First, the cost and unavailability of some materials can be a drawback to large-scale mulching.

When using sawdust as a mulch, nitrogen starvation sometimes occurs. However, this is easily corrected by using additional nitrogen when needed.

Heavy mulching over a period of years may result in a buildup of soil over the crown area of plants. This condition is especially harmful to camellias. After the first 3 years, it may be advisable to rake off the old mulch before applying a new layer to prevent the roots from becoming too deeply buried.

Fertilizing

Ornamental plants require nutrients for healthy growth. Soils that are not well fertilized often provide insufficient plant nutrients.

Different soils contain varying amounts of nutrients. Therefore, one soil or area may require larger amounts of fertilizer than another to grow plants well. The major nutrient needs for landscape plants in Alabama are nitrogen, phosphorus, and potassium. Fertilizers are available to supply these needs. For example, 100 pounds of 12-4-6 fertilizer contain 12 pounds of nitrogen, 4 pounds of phosphorous, and 6 pounds of potassium.

Refer to your soil test report to determine the amounts of lime and fertilizer to add to your soil. Keep in mind that a soil test is needed every 2 to 3 years. These reports will allow you to keep your soil at the proper fertility level. For example, the phosphorus level can build up to an excessive amount if a complete fertilizer (such as 8-8-8) is applied every year. If this is the case, a fertilizer with little or no phosphorus (such as 15-0-15) will be recommended. Soil fertility levels cannot be determined by looking at the plant.

Chlorosis of plants is a condition that sometimes can be corrected by adjusting fertilizer rates (Figure 5). The leaf areas between the veins become a light green or yellow while the veins remain a darker green. In extreme cases, the entire leaf may become yellow. This chlorotic condition occurs when the chlorophyll (responsible for photosynthesis and green color) in the plant fails to develop normally.



Figure 5. Photo of a plant with iron chlorosis.

Chlorosis can also be caused by poor drainage, high soil pH, or too much phosphorus. If soil tests indicate high phosphate levels, use a fertilizer containing a low level of phosphorus. High phosphorus levels often cause iron in the soil to be less available to plants. In such cases, you can apply iron to the plant leaves as a spray or to the root system as a soil drench. You may have to adjust the pH to correct this problem. The soil test will indicate what steps you need to take.

Pruning

Pruning is cutting out unwanted growth to make a plant develop or respond in a desired manner (Figure 6). You prune plants to produce more or better blooms and fruit, to develop or maintain a desired shape or size, to remove older stems and encourage vigorous young ones to take their place, to remove diseased or seriously injured parts, or to remove dead wood or wood that is winter-killed.

Shrubs often cannot go without pruning if they are to serve their intended purpose in the landscape. Except for a few dwarf or extremely slow-growing plants, prune all shrubs regularly or as needed—usually every year or two in areas where neatness is important. For all practical purposes, shrubs and small trees can be pruned at one of two periods, during dormancy (before growth begins in spring) or immediately after flowering.

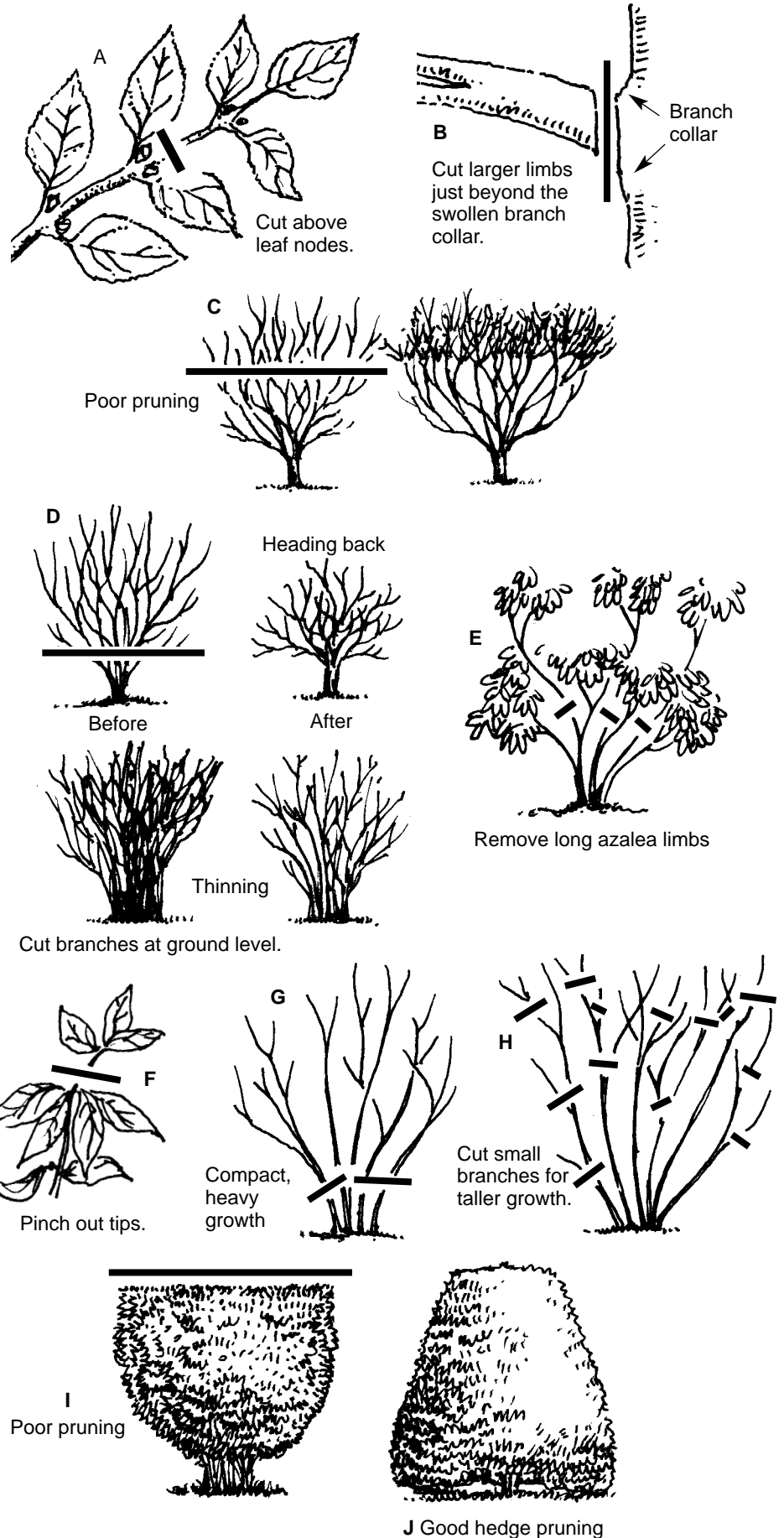


Figure 6. Pruning.

A. Cut small branches just above leaf nodes.

B. Cut limbs over 1 inch in diameter just beyond the swollen branch collar of a larger limb or trunk.

C. Results of poor pruning methods.

D. Examples of proper pruning methods (Heading vs thinning cuts.)

E. Remove long limbs back inside the plant.

F. Pinch out tips of new growth to induce branching.

G. Prune multistem plants back 6" to 12" off ground level for compact, heavy growth.

H. To produce taller plants, cut out only small branches.

I. Pruning hedges straight across top will produce unnatural shape. Prune entire plant to produce rounded effect.

J. Hedges should be pruned so that the base of the plant is wider than the top.

Spring Flowering Shrubs. Since blooms on these plants are formed on the previous year's growth, they should be pruned in the spring after flowering. Generally, pruned plants will have more or larger flowers than nonpruned ones. The following spring flowering shrubs should be pruned in a selective manner to maintain size and promote growth:

- Azalea
- Barberry
- Blueberry
- Crab Apple
- Dogwood
- Forsythia
- Winter Honeysuckle
- Star Magnolia
- Nandina
- Flowering Quince
- Spirea
- Sweet Shrub
- Viburnum

Summer Flowering Shrubs.

Blooms on plants in this category are produced on new spring growth. Therefore, pruning should be done during the dormant season, usually in the early spring before growth begins. Shrubs in this group include the following:

- Abelia
- Crape Myrtle
- Elaeagnus
- Hibiscus
- Bush Honeysuckle
- Magnolia (*virginiana*)

Broad-leaved Evergreen Shrubs.

These shrubs can be pruned slightly at any time of the year to shape the plant. However, plants that go into the dormant period with their flower buds already formed should be pruned immediately after flowering. Those that produce their flowers on new wood may be pruned anytime during the dormant period. Some of the plants with these general pruning requirements are as follows:

- Aucuba
- Boxwood
- Camellia
- Cherry Laurel
- Holly (all species)
- Cleyera

Coniferous Evergreens. Shrubs in this group should be pruned shortly before or just as growth begins in the spring. The following plants should be pruned in this manner:

- Arborvitae
- Hemlock
- Cedar
- Spruce
- Yews
- Juniper

Tools. You can't prune properly without the right tools. Pruning tools are specialized—adapted to a particular type or work. Select pruning tools made of good steel and always keep them sharp.

One of the first tools you will buy is a hand pruner. Other tools include long-handled pruners (loppers), hedge shears, pole pruners, and pruning saws. Wound dressings or "tree paint" offer no healing powers or identifiable benefit to a tree wound.

Pest Control

Insects and diseases must be controlled to grow trees and shrubs successfully. Some pests attack roots; others feed on leaves and stems or damage flowers. One of the most important steps in the control of insects and diseases is to prevent infestation in the beginning. Buy well-grown plants from a reputable nursery. Inspect plants frequently for signs of diseases and insects.

Most weed control around the home is the hand pulling method. However, the best control is a good mulching program with hand pulling as needed.

If you prefer to use herbicides for weed control, contact your county Extension office to find out what is available. Chemical control of weeds for the homeowner is often quite expensive.

Another concern of using chemicals is that they must be evenly distributed at the recommended rate to prevent injury to your plants. Always follow the label!

Summary

This publication includes information that will make your plants more successful. You can readily see that a great deal of work is not required. However, it is important to know what to do and when to do it.

For information about insect, disease, and weed control, please refer to the following Extension publications:

ANR-854, "Weed Control in Residential Landscape Plantings."

ANR-392, "Control Of Entomosporium Leaf Spot on Woody Ornamentals."

ANR-407, "Powdery Mildew on Ornamentals."

ANR-416, "Control of Camellia Flower Blight."

ANR-505, "Diseases of Roses And Their Control."

ANR-542, "Fireblight On Fruit Trees and Woody Ornamentals."

ANR-551, "Dogwood Diseases in Alabama."

ANR-571, "Phytophthora Root Rot on Woody Ornamentals."

ANR-753, "Identification and Control of Botrytis Blight on Floral Crops and Woody Ornamentals."

ANR-753a, "Chemical Control Recommendations—Identification and Control of Botrytis Blight on Floral Crops and Woody Ornamentals."

ANR-857, "Lichens on Woody Shrubs and Trees."

ANR-188, "Controlling Flower Thrips on Ornamentals."

ANR-189, "Controlling Aphids on Ornamentals."

ANR-190, "Controlling Mealybugs on Ornamentals."

ANR-191, "Controlling Bagworms on Ornamentals."

ANR-192, "Controlling Spidermites on Ornamentals."

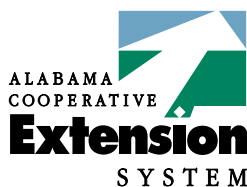
ANR-193, "Controlling Lace Bugs on Ornamentals."

ANR-272, "Controlling Whiteflies on Ornamentals."

ANR-274, "Controlling Scale Insects."

ANR-484, "Controlling Insects and Diseases on Azaleas and Rhododendrons."

ANR-484a, "Chemical Control Recommendations—Controlling Insects and Diseases on Azaleas and Rhododendrons."



Your Experts for Life

ANR-958

J. David Williams, *Extension Horticulturist*, Professor, Horticulture; **Ken Tilt**, *Extension Horticulturist*, Professor, Horticulture; **Dave West**, *Extension County Agent*; and Mary Kathryn Gaylor, *Research Associate*; all with Auburn University. Originally published as ANR-162 by Ron Shumack, former *Extension Horticulturist*.

For more information, call your county Extension office. Look in your telephone directory under your county's name to find the number.

Issued in furtherance of Cooperative Extension work in agriculture and home economics, Acts of May 8 and June 30, 1914, and other related acts, in cooperation with the U.S. Department of Agriculture. The Alabama Cooperative Extension System (Alabama A&M University and Auburn University) offers educational programs, materials, and equal opportunity employment to all people without regard to race, color, national origin, religion, sex, age, veteran status, or disability.

13M, **Revised August 2004**, ANR-958