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Care of the Mature Backyard Apple Tree

Introduction

With careful management the backyard apple tree will provide many benefits to the home gardener: fresh, flavorful and healthful fruit, summer shade and the beauty of spring blossoms. To produce these desired results, growers must pay careful attention to pruning, insect and disease control, fertilization and other cultural practices. The cultural techniques described in this bulletin are adapted for use with all mature (bearing) apple trees.

Pruning

No single cultural technique is more confusing to the home gardener than pruning. To many home gardeners, pruning a large, old tree seems so formidable a task that the tree never is pruned and becomes an unproductive nuisance. The problem is that pruning cannot be standardized. There is no set of directions that precisely describes the process since each tree is different and requires different pruning. The key to pruning is to understand the basic principles of pruning and adapt them to each tree.

Pruning is a dwarfing process. Although pruning stimulates shoot growth, especially near the pruning cuts, the total effect is to reduce overall tree size. Removing live tree branches reduces the total area of the tree. Since these leaves are the food-manufacturing organs of the tree, elimination of a portion of them will necessarily reduce the total amount of growth the tree makes.

Pruning effects are localized. Strong shoots with large leaves tend to arise just back of pruning cuts.

Pruning does not alter the natural habit of the tree. Certain cultivars such as Red Delicious have a very upright growth habit and cannot be made to develop a low-growing spreading habit by pruning.

Excessive pruning has adverse effects. Severe pruning upsets the tree's balance. It will result in over-stimulating the growth of water sprouts and suckers, cause a loss of fruit color and delay fruit maturity. If severe enough, the new succulent shoots will continue growth into the fall, preventing fruit buds from forming. This could keep the tree in a non-fruiting condition for several years. It is usually best to prune lightly to moderately every year.

Make clean, flush cuts. Pruning wounds on healthy trees usually heal over in 1 to 2 years as the result of callus growth. Eventually, living tissue (normal bark and sapwood) will completely cover the dead wood of the wound. Rapid wound healing reduces the chance of invasion by rot-causing organisms. Limb stubs heal very slowly, if at all. Clean, flush cuts (Figure 1) made as close to the parent limb as possible will minimize healing time and infections.

Narrow-angled crotches are weak. Crotch angles less than 35 degrees are weak due to the inclusion of bark between them as the limbs grow. As a result, branches with narrow crotch angles will often "split out" when they become laden with fruit. In addition, the tissues in narrow crotches mature slowly in the fall and are more susceptible to winter injury, rot organisms and canker.

Late, dormant season pruning is best. The ideal time to prune apple trees is any time from February through April. Avoid fall or early winter pruning which may result in severe winter injury to the trees.

***Wound dressings*.** With proper annual pruning, no cuts of more than 2 inches in diameter should be necessary. Pruning wounds of less than 2 inches require no special treatment if the cuts were made "flush" to the parent branch. Wound dressings for cuts of more than 2 inches in diameter can be beneficial. Use only wound sealing compounds developed especially for this use. These are readily available from garden supply and hardware stores. Do not use paints developed for other purposes, as they might be toxic to the live bark around the wound.

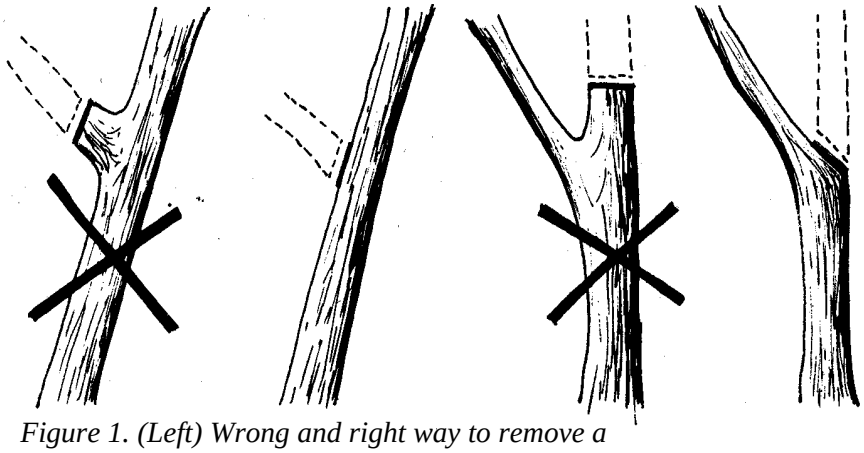

Figure 1. (Left) Wrong and right way to remove a lateral branch. (Right) Wrong and right way to cut a limb back to a lateral branch. Note in both cases that stubs are not left and that cuts are made parallel to the remaining limb.

Pruning Bearing Apple Trees

Applying these basic pruning principles to your mature (bearing) backyard apple tree is the next step and a basic course of action or set of rules helps make the job easier.

1. First, remove all broken, dead or diseased branches. For old, neglected trees, this might include the bulk of the pruning cuts you make.

2. In cases in which trees are too tall for spraying and harvesting, reduce the height by cutting the main upright growing branches (leaders) back moderately to a well-developed horizontal lateral (Fig. 2).

3. Remove all water sprouts (fast-growing, upright branches) and branches that cross and rub.

4. Prune to leave branches in the horizontal plane, eliminating those that hang down or grow upward. The laterals left on the main branches should grow horizontally or nearly so.

5. Eliminate branches that make narrow crotch angles to eliminate splitting or breaking out under crop load stress (Fig. 3).

6. Prune more heavily in the upper part of the tree than the lower. Reducing the spread of the upper limbs will allow more sunlight to reach the lower limbs and help maintain lower limb fruitfulness (Fig. 4).

7. When reducing branch length or extension, make thinning rather than heading cuts (Fig. 5). Heading cuts (removing a portion, but not all, of the current season's wood) generally result in vigorous unrestricted growth immediately behind the pruning cut. Thinning cuts reduce competition between limbs for available space and light, enabling better spray penetration.

8. Prune moderately and annually and do not remove a branch unless there is a very good reason for doing so.

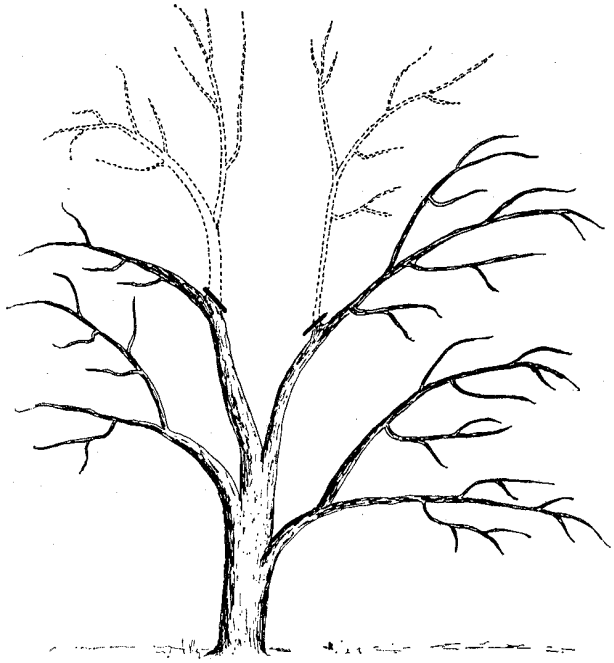

Figure 2. To reduce the height of an excessively tall tree, cut whole limbs out of the top, making cuts flush with the bark of a lower limb.

Fertilizing Backyard Apple Trees

How much fertilizer to apply to bearing apple trees depends on on several factors, including the severity of pruning and tree growth and cropping history.

Most bearing trees will require some fertilization each year to maintain productivity and adequate vigor. Average annual terminal growth of 6 to 12 inches accompanied by moderate dark-green foliage is satisfactory. Should average terminal growth exceed 12 inches, restrict or eliminate the annual application of fertilizer the following year. Also reduce the annual fertilizer application for those trees which made satisfactory growth and have been subjected to severe pruning.

Apply fertilizer in early spring after the snow has gone but before growth begins. Broadcast it evenly on the soil surface under the entire branch spread of the tree. A complete garden fertilizer such as 10-10-10 is best. To determine application rates for “normal” conditions, measure the trunk diameter 30 cm. (1 foot) above the ground. Apply about 1/2 lb. of 10-10-10 for every 1 inch of trunk diameter. Increase or decrease this amount in relation to pruning severity, average terminal growth, leaf color and productivity.

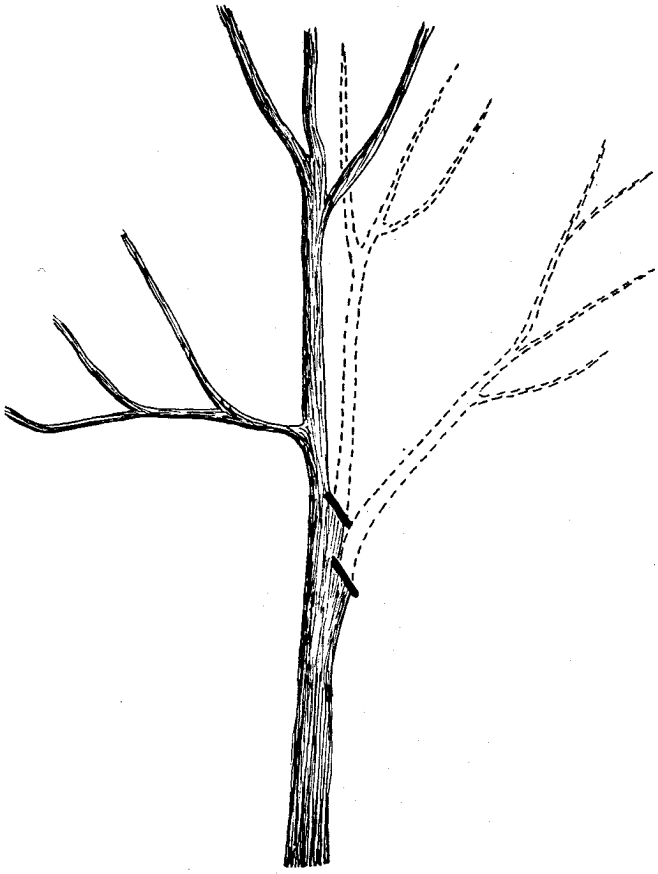

Figure 3. Remove branches which make very narrow angles with the main trunk. If allowed to grow to a productive age, such limbs usually break out, often splitting the entire tree.

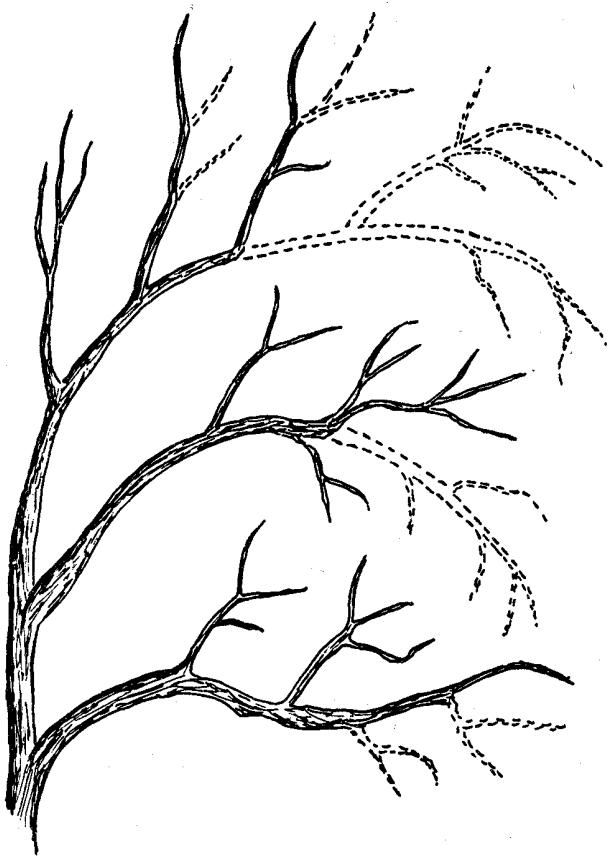

Figure 4. Prune more heavily in the upper part of the tree than the lower to allow more sunlight to reach the lower limbs and help maintain lower limb fruitfulness.

In many cases the backyard apple tree is in a lawn which will be fertilized. Be sure to reduce the amount of fertilizer you apply under the tree by the amount you apply to the lawn under the tree to prevent over-fertilization. Avoid using turf fertilizer-weed control combinations since these can injure apple trees.

Insect and Disease Control

Unfortunately, numerous insect and disease pests attack apples in New Hampshire. If left uncontrolled, these pests will destroy the apple crop completely in most years. Adequate control of these pests will require using certain insecticides, fungicides and miticides in a properly-timed spray program.

Mice cause severe damage to apple trees in many years. Most of the injury (girdling) occurs under the cover of snow when feed is not plentiful and the bark of the apple tree becomes a food source for the mice. Girdling by mice can be prevented. The use of wire mouse guards, especially on young trees, provides excellent protection.

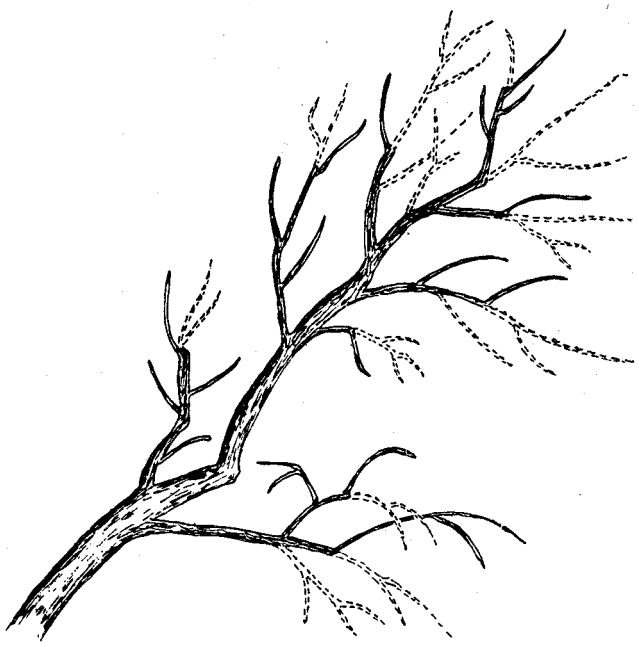

Figure 5. When reducing branch length or extension, make thinning rather than heading cuts.

Use 1 cm (3/8 inch) or finer mesh hardware cloth to construct wire cylinders which are placed around the tree trunk. The mouse guards should be 18 inches high so they will be above the snow level and should be imbedded into the soil 1 inch.

Plastic wrap-around mouse guards are also available and will provide adequate protection. Remove plastic guards each spring and reapply each fall. This will eliminate the possibility the wraps will stretch, leaving exposed wood, and will eliminate dark, moist conditions near the trunk during the growing season. These conditions favor certain insect and disease pests and may prevent the trunk from hardening off properly, increasing its susceptibility to winter injury.

Other measures help reduce mouse populations near the trees and hence the chance of injury: Keep the orchard floor mowed to eliminate the cover of tall grass; eliminate brush and tree prunings and pay particular attention to nearby stone walls, hedgerows or fences; remove all fruit drops from the orchard floor immediately after harvest as these will draw mice into the tree area.

Thinning the Crop

It is desirable in many years to reduce the crop load that results from a heavy bloom and a good "set." Allowing too many fruits to remain on the trees will reduce fruit size and tree vigor and can cause the tree to bear biennially (every other year). Thin apples to single fruits when they occur as doubles or triples. Use additional thinning to produce a final fruit spacing of 6 to 8 inches between fruits. Fruit thinning is not necessary every year and often only on certain limbs within a tree. Perform any necessary thinning after the natural June drop but before July 1.

Credits:
Figure 1 is adapted from "Pruning in the Home Garden," Bulletin 197, Cooperative Extension Service, University of Maryland. Figures 2, 3, 4, and 5 are adapted from "Pruning the Home Orchard," Extension Circular 733, Oregon State University.

original fact sheet by William Lord, UNH Extension Fruit Specialist, edited and reformatted, 3/01