Preferred Trees for Northeast Kansas

SMALL DECIDUOUS TREES (usually under 20 feet at maturity)
Trees with mature height 20 feet or less can be used within 15 feet on either side of utility lines.

- Japanese Maple (Acer palmatum) Protect from summer wind and heat exposure.
- Amur Maple (Acer tataricum var. ginnala) Cultivars: 'Compactum', 'Flame' and other improved selections
- Serviceberry (Amelanchier x grandiflora) Cultivar: 'Autumn Brilliance'. Choose superior cultivars and native species.
- Eastern Redbud (Cercis canadensis) Cultivars: 'Alba', 'Forest Pansy'
- Oklahoma Redbud (Cercis canadensis subspecies texensis 'Oklahoma')
- Chinese Fringetree (Chionanthus retusus
- White Fringetree (Chionanthus virginicus
- Common Smoketree (Cotinus spp.) Purple and green leaf cultivars available
- Winterberry Euonymus (Euonymus bungeanus)
- Star Magnolia (Magnolia stellata) Protect from summer wind and heat exposure.
- Sweetbay Magnolia (Magnolia virginiana) Protect from summer wind and heat exposure.
- Flowering Crabapple (Malus spp.) Many cultivars available. Choose disease resistant cultivars only. Superior cultivars include: 'Prairiefire', 'Adirondack', 'Adams', 'Sargeant', Also refer to KSU Research and Extension Crabapple Publication MF-875.
- Chokecherry (Prunus virginiana) Cultivar: 'Canada Red Select'
- Japanese Tree Lilac (Syringa reticulata) Cultivar: 'Ivory Silk'

MEDIUM DECIDUOUS TREES (usually 20 to 40 feet at maturity)

- Trident Maple (Acer buergeiranum) Some trees could suffer winter injury.
- Hedge Maple (Acer campestre) Cultivar: Queen Elizabeth™('Evelyn')
- Paperbark Maple (Acer griseum)
- Shantung (Purpleblow) Maple (Acer truncatum) Cultivars-hybrid with A. platanoides: 'Keithsform' (Norwegian Sunset™), 'Warrensred' (Pacific Sunset™).
- American Hornbeam (Carpinus caroliniana
- American Yellowwood (Cladrastis kentukea)
- Goldenraintree (Koelreuteria paniculata)
- Osage Orange (Maclura pomifera) Cultivars: 'Wichita', 'Whiteshield. Fruitless and thornless cultivars recommended for most community plantings.
- Saucer Magnolia (Magnolia x soulangiana) Protect from summer wind and heat exposure.
- Flowering Crabapple (Malus species) Many cultivars available. Choose disease resistant cultivars only. Superior cultivars include: 'Centurion'; 'Ralph Shay'; Siberian Crab (M. baccata 'Jackii'); 'Spring Snow'; 'Van Eseltine'; White Angel™ ('Inglis'); 'Red Splendor'. Also refer to KSU Research and Extension Crabapple Publication MF-875.
- Hophornbeam (Ironwood) (Ostrya virginiana)
- Callery Pear (Pyrus calleryana) Several improved cultivars available. Superior cultivars include: 'Chanticleer' (also labeled 'Cleveland Select'), 'Capital', 'Aristocrat', 'Redspire'. 'Bradford' is not a recommended cultivar.
- Chinkapin Oak (Quercus muehlenbergii)
- Western Soapberry (Sapindus drummondii)

LARGE and VERY LARGE DECIDUOUS TREES (usually 40 feet and larger at maturity)

- Freeman Maple (Acer x freemanii)Cultivar: 'Armstrong'; 'Jeffersred' (Autumn Blaze ®); Autumn Fantasy ™. Poisonous to horses.
- Norway Maple (Acer platanoides) Several cultivars available. Superior cultivars include: 'Emerald Queen', 'Superform' (Green leaf cultivars) and ''Fairview', 'Crimson King', 'Royal Red' (Red leaf cultivars)Red Maple (Acer rubrum) Cultivars: Red Sunset ® ('Franksred'); October Glory ®; 'Autumn Flame'; Burgundy Belle ® 'Magnificent Magenta' and columnar forms; Poisonous to horses.
- Sugar Maple (Acer saccharum) Cultivars: 'Commemoration'; 'Legacy'; Caddo; 'Fall Fiesta'; 'Bonfire'; all are more heat tolerant/leaf tatter resistant cultivars.
- River Birch (Betula nigra) Cultivar: 'Heritage'
- European Hornbeam (Carpinus betulus) Upright cultivars available.
- Persimmon (Diospyros virginiana)
- Ginkgo (Ginkgo biloba) Cultivars: 'Autumn Gold'; 'Princeton Sentry'; 'Magyar'. Male cultivars recommended for most community plantings.
- Thornless Honeylocust (Gleditsia triacanthos var. inermis) Cultivars: 'Shademaster', 'Skyline', 'Imperial'
- Kentucky Coffeetree (Gymnocladus dioicus) Seedless cultivars available.
- Sweetgum (Liquidambar styraciflua)
- Black Tupelo (Black Gum) (Nyssa sylvatica)
- London Planetree (Platanus x acerifolia) Cultivar: 'Bloodgood'
- Sawtooth Oak (Quercus acutissima)
- White Oak (Quercus alba)
- Swamp White Oak (Quercus bicolor)
- Shingle Oak (Quercus imbricaria)
- Bur Oak (Quercus macrocarpa)
- Willow Oak (Quercus phellos)
- Chestnut Oak (Quercus prinus)
- English Oak (Quercus robur)
- Red Oak (Quercus rubra)
- Shumard Red Oak (Quercus shumardii)
- Baldcypress (Taxodium distichum)
- American Linden (Tilia americana) Cultivars: 'Redmond'
- Littleleaf Linden (Tilia cordata) Cultivars: 'Greenspire'.
- Lacebark Elm (Ulmus parvifolia) Cultivars: 'Emeri I' (Athena®); 'Emer II' (Allee®); Bosque™; 'Emerald Prairie'; 'Frontier'.

EVERGREEN TREES

- Upright Chinese Juniper (Juniperus chinensis) Many cultivars available. See your KSU-County Extension office or local nursery for the best recommendations.
- Eastern Red Cedar (Juniperus virginiana) Many cultivars available. Superior cultivars include: 'Canaertii' (Canaert Red Cedar), 'Taylor', 'Burkii'
- Black Hills Spruce (Picea glauca 'Densata')
- Norway Spruce (Picea abies)
- Limber Pine (Pinus flexilis) Cultivar: 'Vanderwolf's Pryamid'

Standard Tree Planting Detail

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Selecting trees

Consider the limitations of the planting site, the purpose for the tree, and each tree's unique growing requirements before selecting the type of tree to be purchased. Before purchasing, check to be sure that the new tree does not have a great deal of soil added over the root flare. The root flare is the point where the top major roots extend out from the tree trunk. Unfortunately many new trees have the root flare buried under several inches of soil. This is to be avoided if possible.

Determine the proper planting depth

Trees should be planted with their top major roots even with the soil line (see Figure 1). Trees planted at the wrong depth do not develop well and may have shortened life spans. Excess soil should be removed before planting.

For balled and burlap-wrapped trees, gently poke a stiff wire through the burlap next to the tree trunk until you hit a root. Note the distance between the top of the root ball to the first root. Check in two or more locations around the trunk to make sure you've located the top major roots. Leave the burlap in place to do this to make moving the tree easier. The distance from the top-most buried root to the bottom of the ball is the correct depth to dig your hole. Carefully remove the excess soil from the top of the root ball once it is in the planting hole. Container trees should have the soil carefully removed from the top, exposing the root flare, and then planted.

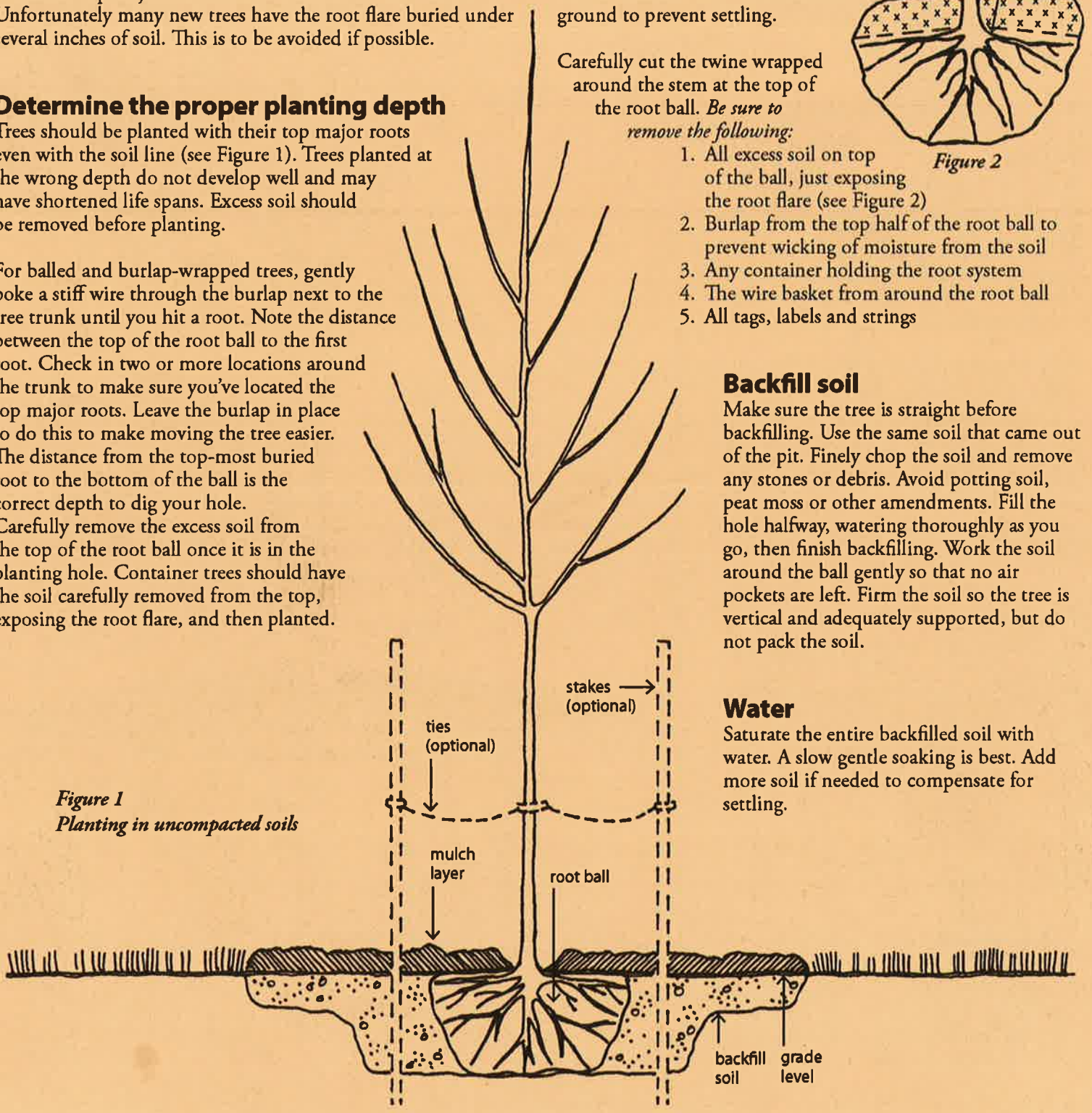

Figure 1
Planting in uncompacted soils

The planting hole

Dig a pit at least twice the diameter of the root ball and deep enough to place the root flare even with or up to one inch higher than the soil line. Handle the tree by the root ball, not by the trunk. Be sure the root ball or container soil rests on solid ground to prevent settling.

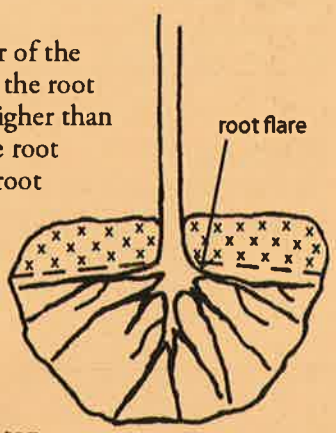

Figure 2

Carefully cut the twine wrapped around the stem at the top of the root ball. *Be sure to remove the following:*

1. All excess soil on top of the ball, just exposing the root flare (see Figure 2)
2. Burlap from the top half of the root ball to prevent wicking of moisture from the soil
3. Any container holding the root system
4. The wire basket from around the root ball
5. All tags, labels and strings

Backfill soil

Make sure the tree is straight before backfilling. Use the same soil that came out of the pit. Finely chop the soil and remove any stones or debris. Avoid potting soil, peat moss or other amendments. Fill the hole halfway, watering thoroughly as you go, then finish backfilling. Work the soil around the ball gently so that no air pockets are left. Firm the soil so the tree is vertical and adequately supported, but do not pack the soil.

Water

Saturate the entire backfilled soil with water. A slow gentle soaking is best. Add more soil if needed to compensate for settling.

Mulch

Cover smoothed soil with 3 inches of wood or bark chips. Shape the mulch into a doughnut 2 to 3 feet wide, leaving a small gap near the trunk. Do not mound mulch onto the trunk of the tree. Mounding encourages root girdling, which can weaken and kill trees. Black plastic, grass clippings or sawdust should not be used as mulch. Keep mulch weeded. Replace as needed.

Pruning

Remove only broken or badly deformed branches the first year. Begin a regular pruning program the second or third year after planting.

The following procedures are optional

Stakes

Stakes may be used to prevent shifting of the root ball or to protect the stem from mowing equipment. If needed, the tree should be guyed strongly enough to provide support, but flexibly enough to allow 6 to 8 inches of sway. Drive one or more stakes near the tree but not through the roots.

The best guying materials are wide and flexible, such as plastic horticultural tape or canvas webbing. If guy wires are used, placed them through tubing or hose sections to prevent damage to the bark. All guys/ties should be placed low on the trunk. Remove guys/ties as soon as the tree can stand alone–about 3 months, but no longer than a year after planting.

Trunk wrap

Research indicates that trunk wraps provide little, if any benefit to trees. In fact, they can encourage damaging insects or disease-causing fungi. Avoid using trunk wraps unless specifically recommended.

Planting in compacted soils

To test for compacted soil, do a simple percolation test. Dig a hole 12 inches to 18 inches deep and fill it with water. If any water is still in the hole 12 to 18 hours later, then you have compacted or heavy clay soils.

Roots need oxygen, so dig a wide, shallow hole three to four times the width of the root ball or container and only half as deep. Mound backfill soil slightly to the top of the root flare, covering the entire excavation. This creates a raised planting bed, which will improve the tree's performance (see Figure 3). Soils that hold excessive moisture may need a subsurface drain tube installed below the root ball.

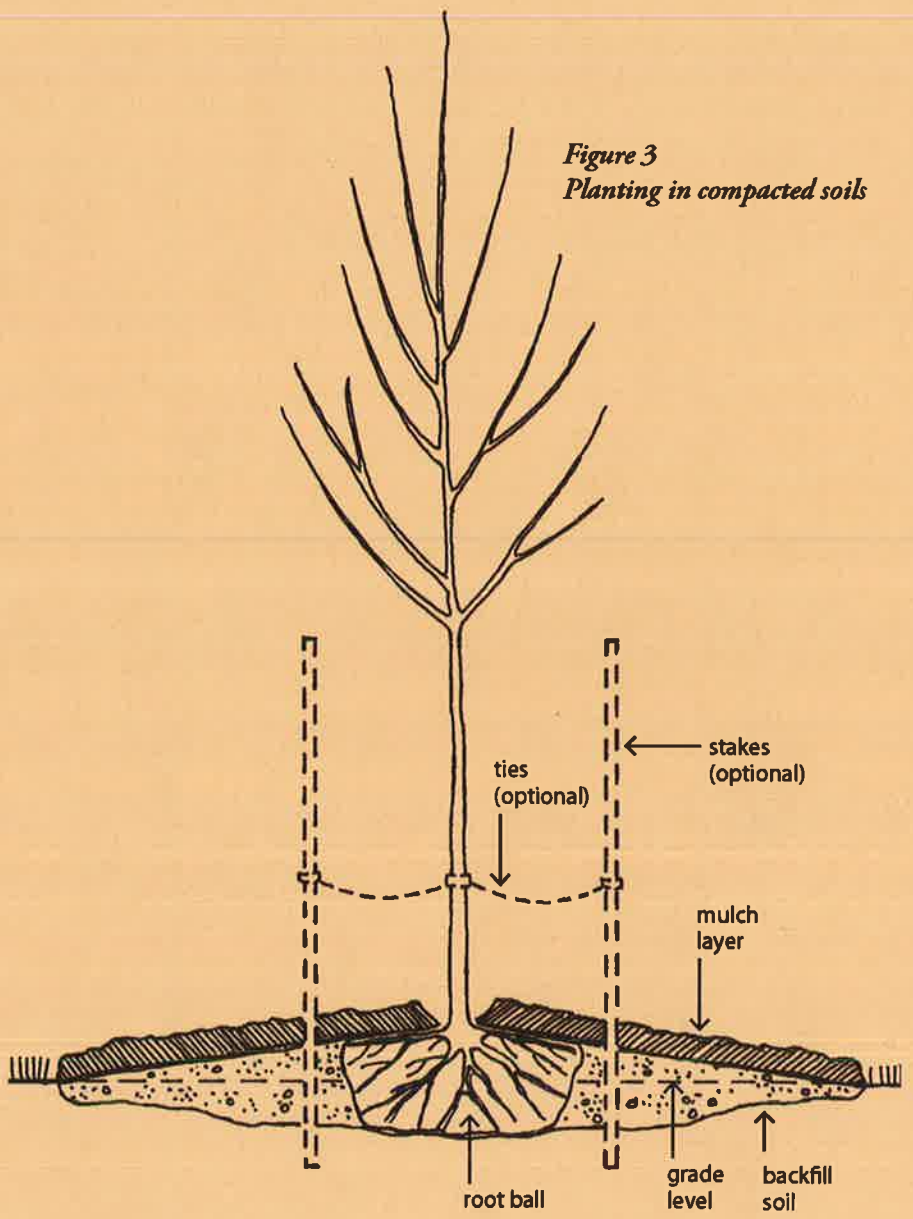

Figure 3
Planting in compacted soils

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Basic Pruning Guidelines

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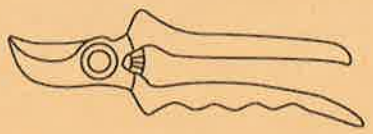
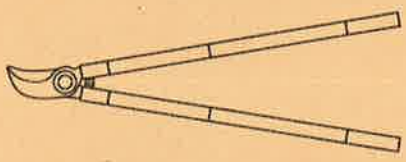
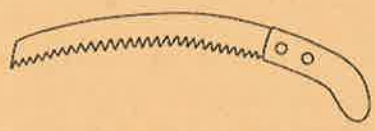
Use the Correct Tools



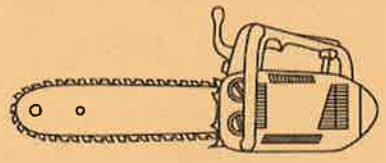
Hand pruners are useful for small branches, up to about 1/2-inch diameter. Use loppers or a saw for larger branches or for species with hardwood.



Long-handled loppers may be used to remove larger diameter branches, but precise cuts are more difficult to make.



Curved blade pruning saws cut on the pull stroke. Newer blade designs are able to cut large and small diameter branches quickly and cleanly. Pruning saws are available with fixed or folding blades, or mounted on a pole. Larger pruning saws are sometimes used by professionals.



Chainsaws are not recommended for general pruning except by professionals as a time saver. (Consider hiring an arborist for large or potentially dangerous work.)

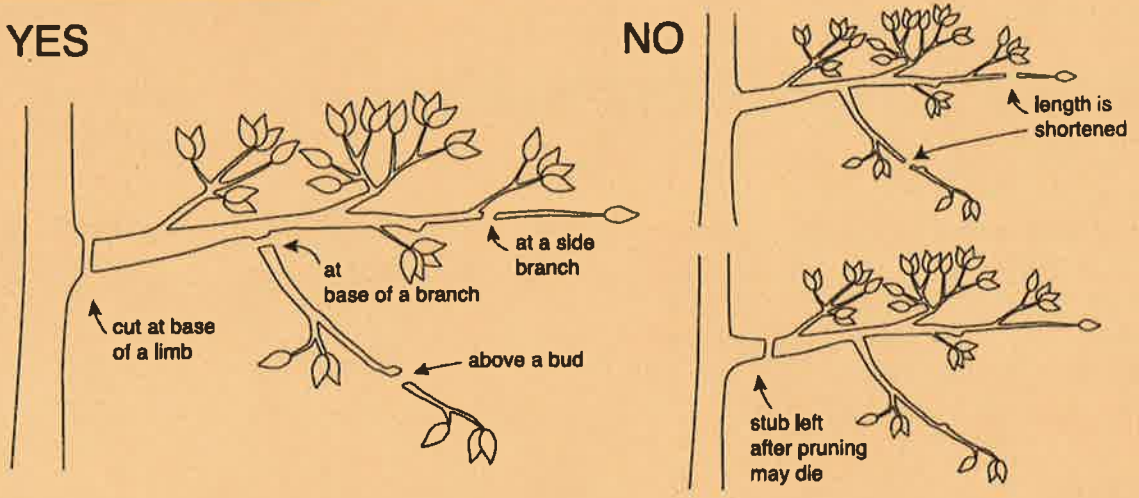
Timing is Important

	J	F	M	A	M	J	J	A	S	O	N	D
Best Time	●	●										●
Worst Time				●	●							
Light Pruning	●	●	●			●	●	●	●	●	●	●

To minimize damage and synchronize with the natural growth cycle, prune in winter (January, February). Avoid heavy pruning as leaves are expanding in early spring (April, May) when tree energy reserves are low. Timing for light pruning is less critical. For maximum display of spring flowering species, prune after bloom (June or later). Prune dead limbs and branches at any time.

Remove Whole Limbs or Branches

It is preferable to remove an entire limb or branch rather than to shorten its length. Branches may be cut back to a twig, or twigs to a bud, where new growth will resume. This technique respects natural growth patterns.



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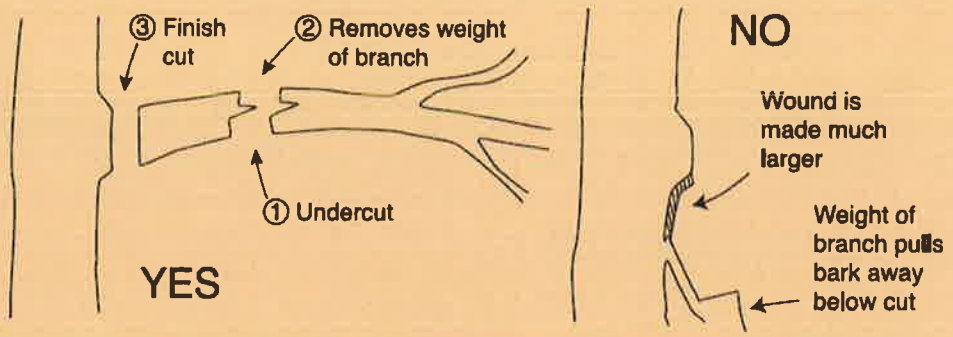
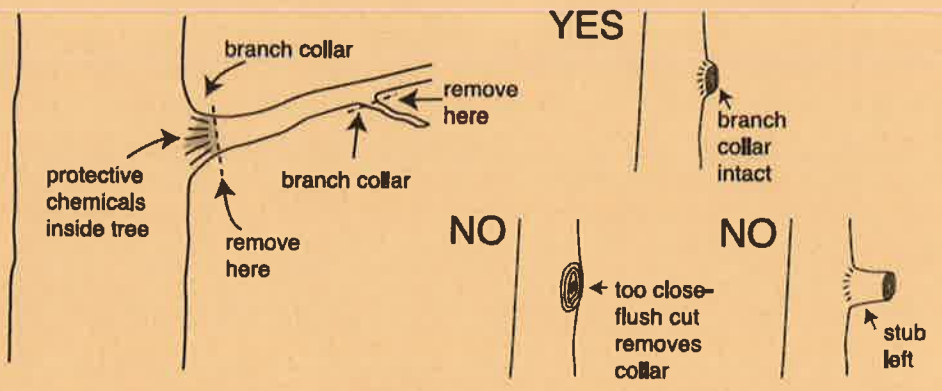
Use the Three-Cut Method

Branches one inch in diameter or larger should generally be removed in a series of three cuts. This will prevent bark attached to the base of the cut branch from stripping away bark on the trunk as it falls.



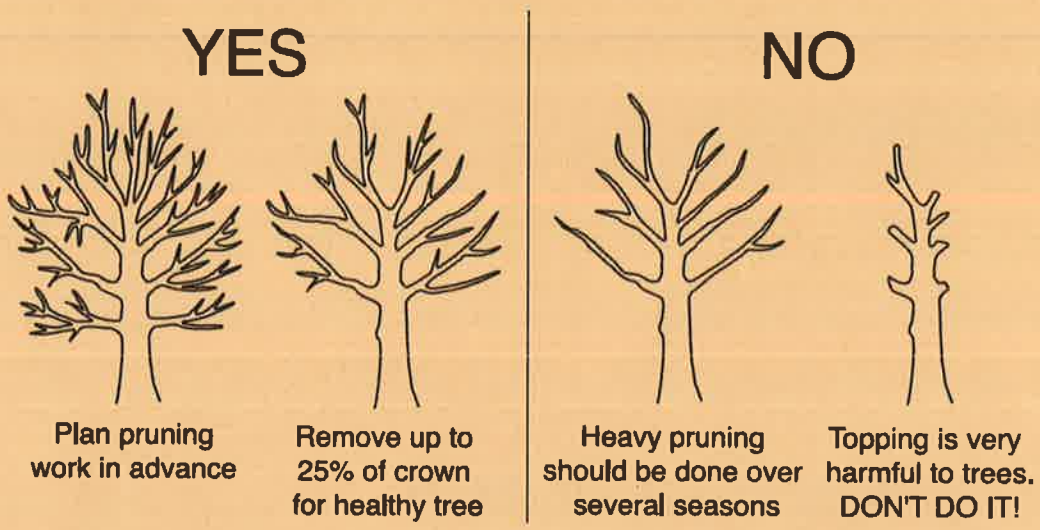
Save Branch Collars

Trees produce natural chemicals to prevent decay from entering the tree at the base of each branch or limb. To preserve this chemical zone, leave the slight swelling, or branch collar, at the branch base. The resulting wound will be smaller than if the branch were cut flush. This rule applies to large limbs and small branches.



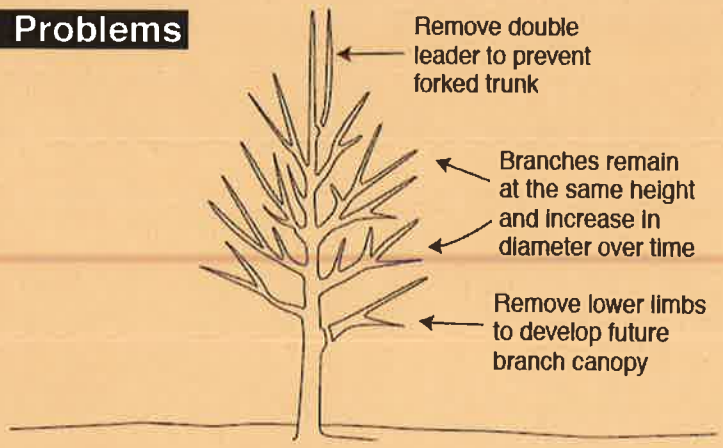
Don't Overprune

It is best to remove only a small percentage of the live part of a tree at one time—a maximum of 25 percent in one year for healthy, vigorous trees. This will help maintain a balance between leaf area and other tree functions. Prune weak or declining trees less. Severe pruning may stimulate undesirable sprouting from the stem or roots. Avoid pruning over 25 percent of the live crown of any tree two years in succession.



Prune Now and Avoid Future Problems

Use simple hand-pruning tools when a tree is young to prevent future structural problems and the need to remove large limbs later in its life. It is especially important to remove forked tops (double leaders), and to gradually remove lower branches for shade-tree development.



Mulch:
Your Tree's Best Friend

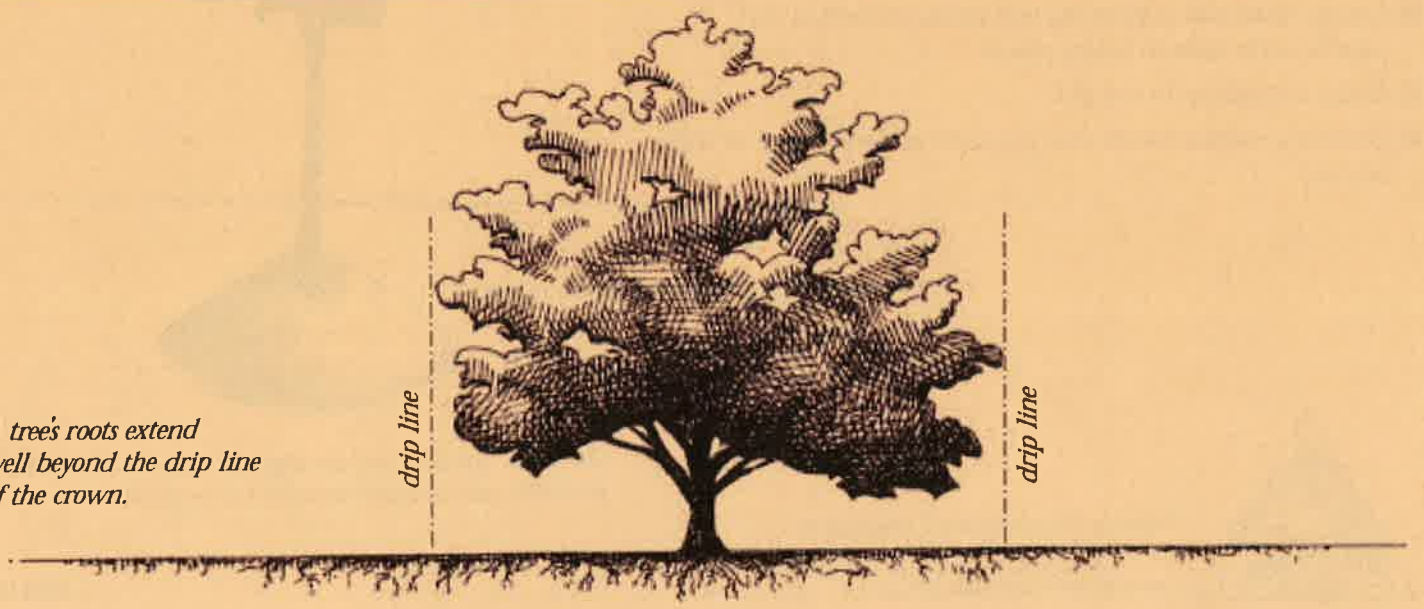
Mulch is any material placed on the soil to conserve moisture and improve growing conditions. Common mulches include wood chips, bark, pine needles and compost. Mulching is one of the most valuable things a homeowner can do for a tree's health. Mulch covering all or a part of a tree's root zone can reduce soil moisture loss, control weed and grass competition, protect the trunk from lawnmowers and improve soil structure. Mulch also gives landscapes a well-groomed appearance. However, if mulch is applied too deep or the wrong material is used, it can actually harm trees and other plants.

Benefits of Mulching

- Helps maintain soil moisture; evaporation and the need for watering is reduced
- Protects the trunk and surface roots from mowers and string trimmers
- Helps controls weeds and grass
- Insulates the soil surface, keeping it warmer in winter and cooler in summer
- Improves soil structure, aeration and drainage
- Increased soil fertility as organic matter decomposes
- Easier lawn maintenance
- Well-cared-for appearance

Types of Mulch

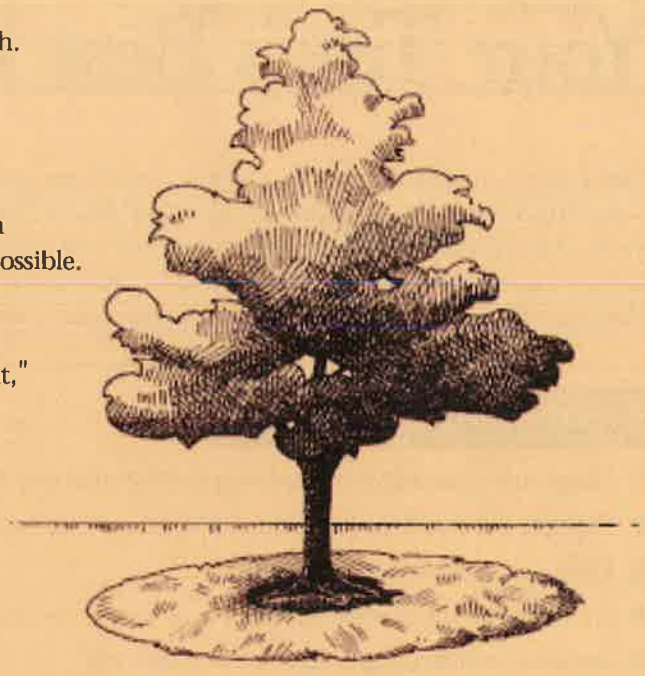
- Organic mulches include wood chips, pine needles, shredded bark, nut shells, compost mixes and leaves. Organic mulches decompose at different rates depending on the material and must periodically be replenished.
- Inorganic mulches include decorative stone, lava rock, pulverized tires and geotextile fabrics. Inorganic mulches are useful in xeriscaping and for soil protection in high traffic areas but are not recommended for mulching around trees. Heat reflected from inorganic mulches may be high enough to kill thin-barked trees.



A tree's roots extend well beyond the drip line of the crown.

Proper Mulching

- Check soil drainage in the area to be mulched. Determine if there are trees or plants that may be affected by the type of mulch. Most organic mulches work well in most landscape situations. Some plants may benefit from mulches such as pine needles or bark that acidify the soil.
- Apply a 2- to 4-inch layer of mulch over well-drained soils. Use a thinner layer on poorly-drained soils. The wider the mulch ring, the greater the benefit. Mulch out to the tree's drip line if possible.
- Do not pile mulch against the tree trunk. Pull mulch back several inches from the trunk so the base of the trunk and root crown are exposed. The mulch ring should resemble a "doughnut," not a "volcano."
- If mulch is already present, check the depth. Do not add more if a sufficient layer is already in place. Rake old mulch to break up matted layers and improve its appearance.
- Composted wood chips make good mulch, especially when it contains a mixture of leaves, bark and wood. Fresh wood chips may be used around established trees and shrubs. Avoid using uncomposted wood chips that have piled without exposure to oxygen. Sawdust and straw are not recommended.
- Organic mulches are preferred to inorganic materials. Organic mulches should be well-aerated and composted. Avoid sour-smelling mulch.

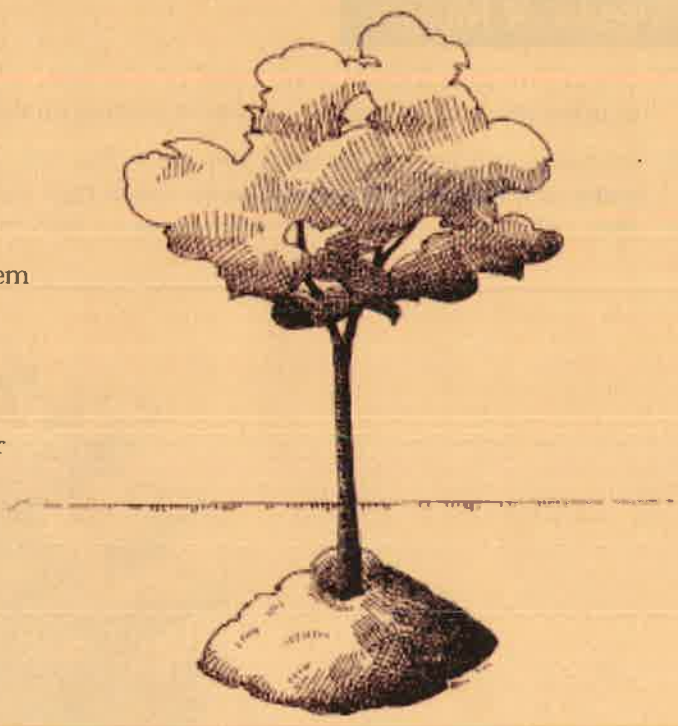


A properly mulched tree will have a 2- to 4-inch layer of mulch in a doughnut-shaped ring. The ring should extend out to the tree's drip line if possible.

If a Little is Good, Then . . .

Over-mulching your tree or piling mulch against the trunk can:

- Promote excessive soil moisture and root rots
- Cause inner bark tissue to die
- Lead to insect and disease problems
- Create habitat for rodents that chew the bark and girdle the stem
- Lead to anaerobic conditions that produce alcohols and organic acids toxic to young plants
- Cause imbalances in soil pH
- Become a matted barrier that prevents the penetration of water and air



A mulch "volcano" sets the stage for insect and disease problems, root rot and excessive soil moisture.

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