TREES & SHRUBS

Care of Young Transplanted Trees no. 7.226

by J.E. Klett and D.E. Whiting [1]

Quick Facts...

Late March to mid-April is the best time of year to plant trees.

Encourage a vigorous root system by watering to a depth of 12 to 18 inches below the soil surface.

Mulching around the tree base reduces soil moisture loss, improves water and air penetration into the soil, and keeps soil temperature above freezing longer in the fall.

Selective removal of crowded, interfering or weak branches is the only pruning that should be done at planting time.

Top-heavy trees and evergreens with high wind resistance may need to be guyed.

Colorado State University Cooperative Extension

Proper soil preparation before planting is often the difference between success and failure. Soil preparation promotes favorable growing conditions by improving drainage and reducing compaction. For more information on soil preparation, see fact sheet 7.222, *Soil: The Key to Successful Gardening*.

Planting trees in early spring helps ensure their survival during the first year. Soil temperatures in late March to mid-April are warm enough for root growth to occur, firmly anchoring the tree in its new environment. This early root growth is important because leaf development and warmer, drier weather both demand considerable water from the newly established root system.

Trees planted in the fall are subject to the stress of dry winter conditions; roots need to become established before cold weather sets in. If planting in the fall, do so no later than mid-October, and mulch the soil with 3 to 4 inches of wood chips. (See 7.417, *How to Plant Trees and Shrubs*.)

Transpiration occurs throughout the year, but the amount of water lost increases dramatically with foliage growth. Moisture stress often occurs in summer-planted trees because the tree transpires more water than the unestablished root system can absorb. Severe moisture stress weakens the tree and can even cause its death.

Proper Watering

Trees require water, but **improper** watering practices can cause more harm than good. Overwatering, a main cause of failure, forces oxygen out of the soil and results in oxygen starvation of roots. This causes root death and leads to an eventual decline of the tree. The yellowing of foliage, first developing low and on the inside of the tree and progressing to the outer leaves, is an indication of oxygen starvation. Avoid frequent light waterings. This promotes shallow root systems susceptible to winter drying and summer heat stress. Deep watering, to a depth of 12 to 18 inches below the soil surface, favors a vigorous root system.

Determine the timing of watering by the moisture level of the soil just above the root zone — the area containing most of the tree's absorbing roots, generally 6 to 10 inches below the soil surface. Use a garden trowel to dig down 6 to 8 inches at the edge of the planting hole. If the soil at that depth feels powdery or crumbles when squeezed in your hand, water the tree. Soil that forms a ball and clings together when squeezed contains adequate moisture.

By digging to determine soil moisture, you should be able to devise a watering schedule for your situation. Adhering to the schedule, allowing for natural precipitation, will eliminate the need to continually dig to check moisture. A house plant water meter also is useful to determine soil moisture.

Extended dry periods, especially in fall and winter, may cause humidity and soil moisture to drop below required levels for shallow-rooted trees. The result is injury or death to roots. Winter watering prevents drying damage by

Guying

Trees that are top-heavy or have high wind resistance, such as evergreens, may need to be guyed until the end of the second season to prevent wind throw.

To avoid girdling injury, attach guy wires or ropes through grommets at the ends of strong, soft, wide strips of material. ***Do not use wire through garden hose.*** *Indoor-outdoor carpet cut in strips 3 to 4 inches wide or webbed strapping like that used in backpacks is suitable.*

Place guying straps around the tree below the midpoint. Wires or ropes should have a slight sag to allow for natural sway but should not be so loose that the tree can be uprooted.

replenishing soil moisture. Water early in the day when temperatures are above freezing. (Refer also to 7.211, *Fall and Winter Watering*).

Mulching around the tree's base reduces soil moisture loss, improves water and air penetration, and keeps soil temperature above freezing longer in the fall. These conditions are conducive to root growth and therefore improve tree vigor. Wood chips, shredded bark, dried grass clippings or pine needles all can be used for mulch. Cover the area dug up during transplanting with a mulch about 3 to 4 inches deep. **Avoid mounding mulch next to the tree trunk.**

Fertilizers

Because soils in Colorado usually contain adequate nutrient reserves, fertilizer applications are seldom necessary until the second year after transplanting. Consult your local Colorado State University Cooperative Extension county office for assistance in obtaining a soil test.

For best results, fertilize once in the spring after leafing. There are several methods for applying fertilizer to trees. The easiest and most economical is broadcasting, or simply spreading the material under the tree as you would on the lawn. Follow this by a thorough watering to carry the minerals to the root zone. **Warning:** The quantity of fertilizer required by established trees can burn lawns if broadcast in a single application. In these cases, apply the recommended amount in several partial applications.

Time-release packets designed to be placed in the planting hole often release nutrients too slowly and do not give good nutrient distribution. They also tend to continue to release nitrogen late in the summer, encouraging succulent growth susceptible to winter injury. Tree spikes do not give good distribution of nutrients in Colorado's heavy clay soils.

Sunscald Prevention

With the exception of birch and aspen, young transplants and thin-barked trees, especially those planted on the south side of buildings, are susceptible to an injury called "sunscald" during the winter and early spring. The surface temperature of trees is elevated above that of the surrounding air by the absorption of sunlight. This rise in surface temperature occurs long enough to make cells in the bark active and thus vulnerable to injury during the sudden nighttime temperature drop.

Because it reflects light, a commercial crepe wrap reduces the heating effect that leads to sunscald damage. Start at the base of the trunk and overlap the wrap as it is wound upward. Secure the top end with a single staple or small tack. Leave the wrap on the tree from November through April for maximum protection. Remove it during spring and summer so it doesn't harbor insects and disease organisms.

Pruning

Selective removal of crowded, interfering or weak branches is the only pruning that should be done at planting time. Nutrients necessary to support future growth are stored in branches. Indiscriminate pruning depletes the tree's food reserves. Pruning also reduces the amount of foliage the tree has to produce food needed for growth.

Avoid pruning back from branch tips. Pruning this way alters the tree's natural shape and removes the buds that produce the strongest growth. Tip pruning also tends to stimulate weak sucker growth or "water sprouts." Do not paint pruning cuts. Paint increases wound drying time and promotes disease development on the cut. For more information on recommended pruning methods, see 7.207, *Pruning Shade Trees*.

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