1994

G94-1195 Care of Newly Planted Trees

David P. Mooter
University of Nebraska - Lincoln

Mark O. Harrell
University of Nebraska - Lincoln

Laurie J. Stepanek
University of Nebraska - Lincoln, lstepanek2@unl.edu

G94-1195

Care of Newly Planted Trees

Mulching, pruning, watering, wrapping, staking, and fertilizing affect the growth and development of young trees. This NebGuide explains the proper practices of caring for newly planted trees.

David P. Mooter, Community Forester
Mark O. Harrell, Forest Pest Specialist
Laurie J. Stepanek, Forest Pest Management Assistant

Landscape trees provide beauty and utility. The care they receive during the first few years after planting is critical. This NebGuide discusses cultural practices that are recommended for young trees. Many recommendations have changed drastically in recent years in light of new and more thorough research. For additional information on landscape tree selection and planting refer to NebGuide 91-1050 *Woody Landscape Plants: Selection and Planting*.

Mulching

Mulching is the most important postplanting practice that you can do to improve the health and vitality of your landscape plant. Research has shown that wood chip mulch can nearly double plant growth in the first few years after planting. Mulching conserves moisture and insulates roots from heat and cold extremes. Proper mulching provides a well-groomed appearance, eliminates grass or weed competition and prevents damage from mowers and weed trimmers. Mechanical damage is one of the leading causes of injury and death to landscape plants.

Desirable mulching materials include wood chips, wood shavings, bark, or equivalent materials. Coarse-textured organic mulches are preferred since they tend to aerate the soil and replenish soil nutrients as they decompose. Mulch with a 2- to 4-inch layer of organic material. The diameter of the mulched area should be at least 2 feet, although larger areas are recommended.

Caution must be used when applying mulch since a layer greater than 4 inches thick may provide an excellent habitat for small rodents that can cause considerable tree damage, primarily during the winter months. If damage from small rodents occurs, it may become necessary to use pesticides, change the mulching method, or even eliminate the practice of mulching. Heavy mulching can also be a problem in poorly drained or wet sites where moisture can remain at high levels for extended periods and cause root dieback. In addition, heavy mulch layers encourage tree roots to grow up into the mulch material, which may dry out during long dry periods, causing these roots to die.

Some concern has been expressed about the role mulch may play in attracting unwanted pests into the home. Termites can infest wood mulches. Never place mulch in direct contact with any wood surface on the home. Inspect mulch beds regularly if they are part of a foundation planting, especially in areas where termites are known to be a problem. If termites are detected, contact a professional pest control operator and have the structure inspected. (For more information about termites, refer to NebGuide 91-1062, Termites). Mulch beds that are more than 6 feet away from the home will not cause a problem. If the home has already been treated for termites, be certain that mulch does not provide a "bridge" over the treated soil area.

Using landscape fabric for mulch in ornamental plantings is generally not recommended. Tree roots beneath landscape fabric may grow up into the fabric. If the fabric is lifted or adjusted as changes are made in the landscape, the tree roots will be damaged. In high rodent population areas, using landscape fabrics may increase the damage to tree roots by field mice. And unlike organic mulches, landscape fabrics do not provide nutrients to the soil. Nevertheless, in tree plantings where supplemental irrigation is not provided (such as in windbreaks), landscape fabrics may improve seedling survival by limiting weed competition and conserving soil moisture.

Pruning

Trees and shrubs should be pruned at planting time only to remove branches damaged during handling and transplanting. The main leader on a single-stemmed tree should not be pruned unless it has been damaged. Lower branches should not be removed because they manufacture critically needed food. All transplanted trees should be inspected during the first fall and winter after planting and pruned to remove any dead or crossing branches or to improve tree structure. This pruning period is also an excellent time to inspect the trees for other problems.

Watering

Water is critical to the success of any tree or shrub planting. Tree roots, especially the small, water-absorbing roots, are easily damaged during transplanting. For sufficient water uptake to occur, the root ball of a newly planted tree must be kept moist, but not saturated. Monitor the moisture in the root ball daily, and water as needed so that the root ball does not dry out. The area outside of the root ball also should be watered to encourage root growth into the surrounding soil. Avoid overwatering, which is a major cause of tree failure in many Nebraska communities. Heavy clay soils that have been compacted during construction activities severely restrict the movement of water and commonly lead to saturated conditions.

In areas with fine textured soils, such as those containing high levels of clay or silt, newly planted trees should receive no more than an inch of surface water per week during the growing season. Supplemental watering is not necessary during periods of adequate rainfall. Water no more than two or three times per week for a total of 1 inch. Operating automatic lawn irrigation systems for 20 to 30 minutes per day often results in a continuously saturated soil condition, which in turn causes severe root damage and tree

death.

In sandy soils, water drains more easily, and up to 2 inches of water per week may be necessary to keep the soil moist. Carefully monitor the moisture level in the root ball of balled and burlapped trees planted in sandy soils. Water does not drain easily from the fine textured soil of the root ball into the surrounding sandy soil, and saturated conditions in the root ball may develop.

Wrapping

For many years it was recommended that tree trunks be wrapped to protect them from sunscald or freeze injury, rodent feeding, mower and weed trimmer damage, and other assorted problems. Research has shown that tree wraps may not always protect trunks from damage, and in fact, can cause, hide and increase problems. In addition, tree wrap covers the photosynthetic tissues of the trunk, preventing the production of food that is needed by the young tree.

Some wraps are claimed to protect trees against insect damage. However, borer activity under wraps and guards is frequently reported, and research has shown that insect and disease problems can sometimes be even worse on trees that are wrapped. Often the tree wrap causes the bark to remain moist, even in dry weather. Bark and cambial tissue may be seriously damaged or killed when too much water is held against the trunk. This problem is compounded when wraps at the base of the trunk are covered with several inches of mulch.

Cracks in the bark, which wrap is supposed to prevent, frequently occur in areas where wrapping material is loose or partially degraded, allowing uncovered portions of the trunk to heat or cool more than the covered areas. Wraps supposedly moderate temperature fluctuations in young, thin-barked trees, but some studies have shown that certain paper wraps actually cause greater fluctuations of bark temperature.

Since the problems that can occur with tree wraps can be very damaging, the routine use of wraps is not recommended. Tree wraps should be used only if a nursery guarantee requires it or during the time that the tree is being transported and needs protection from mechanical damage. If used, wrap should be on the tree only during the first winter and should be removed completely the following spring. Wrap left on the tree during the growing season may girdle the tree as the trunk grows in diameter.

Damage from rodents, mowers and weed trimmers can be prevented by using plastic guards. A simple, yet effective guard can be made using perforated drain tile cut in 12-inch sections and split down the side so that it can be placed around the tree trunk. Plastic guards should be monitored regularly and removed before rubbing or girdling problems occur.

Staking and Guying

The purpose of most staking and guying is to prevent the newly planted tree from tipping over in the wind. If at all possible, staking and guying systems should not be used, but in windy, exposed areas this practice is sometimes appropriate. Excessive movement will dislodge the small, fibrous roots from their new footing in the soil before they are firmly established. However, many trees are girdled and killed because guying materials are not removed or are improperly installed. Staking and guying materials should be strong enough to provide support, but flexible enough to allow some movement. Guying materials should have a broad surface at the point of contact with the tree to prevent damage from rubbing.

Plastic horticultural tape or canvas webbing that is at least 1 1/2 inches wide are examples of good guying materials. Do not use a wire in a hose. All guying materials should be removed at the end of the first growing season to prevent trunk girdling. Any trees that do not establish within a year will more than likely never establish a strong root system. The stakes may be left in the ground, if desired, to protect the trunk from damage by mowers and other equipment.

Fertilizing

Fertilizers are generally not recommended at planting time since most Nebraska soils contain sufficient levels of available nutrients to supply the requirements of newly planted landscape trees. Nitrogen fertilizers in particular should be avoided because the nitrogen promotes shoot growth over root growth, and re-establishment of the root system is required before a newly planted tree can adequately support new top growth. Sites with very poor soil or where construction activities have altered the soil composition may be deficient in certain nutrients. In such cases, professional help should be sought.

File G1195 under: FORESTRY
B-13, Tree Planting
Revised March 2002; 2,500 printed.

Issued in furtherance of Cooperative Extension work, Acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture. Elbert C. Dickey, Director of Cooperative Extension, University of Nebraska, Institute of Agriculture and Natural Resources.