



# Staking and Guying Landscape Trees

Staking or guying landscape trees on exposed sites is an important ingredient of successful tree planting in the Great Plains. Research suggests such practices may cause more harm than good, or are unnecessary. This is not the case on exposed, windy sites typical in much of Kansas.

The root ball of a newly planted but unstaked tree tends to roll or pivot in the ground, resulting in tree lean or blow-over. In addition, trunk movement from strong wind, at or below the soil line, will break the root ball, destroying roots and resulting in a wobbly tree. The plant typically dies because constant movement prevents root establishment. These problems can be avoided by properly staking or guying a newly planted tree.

Most deciduous trees larger than 5 feet tall are candidates for staking when planted on an exposed site. The larger the tree, the more important it is to provide extra support. Usually, a deciduous tree up to 1½ to 1¾ inches in caliper (10 to 12 feet in height) can be staked using the method illustrated in Figure 1. A tree larger than this will need to be supported by a three-way guying system (Figure 2).

An upright evergreen 4 to 5 feet or larger should be staked or guyed on exposed sites. A tree less than 6 feet in height can be supported

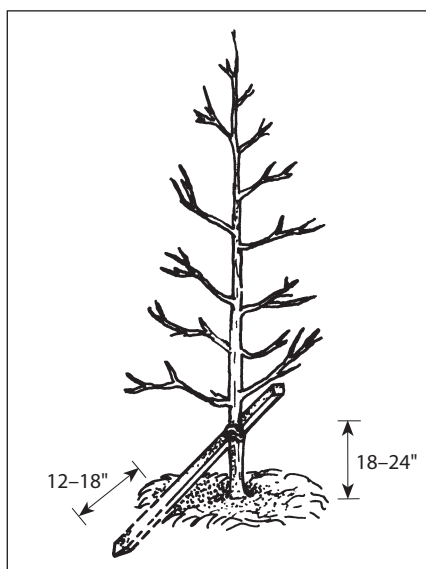
by staking; however, it is easier to install the guying method because of low limbs and plant density. Evergreens more than 6 feet in height require guying.

Staking and guying of a tree must be done properly, and the system must be maintained. It is best to avoid using wire or cable around the trunk, but if support must be provided in this manner, protect the tree by running the wire through a length of rubber or vinyl hose to serve as padding. Commercial rubber, nylon, or vinyl ties are less likely to damage the tree and should be used whenever possible. The wooden stake should not rub against the

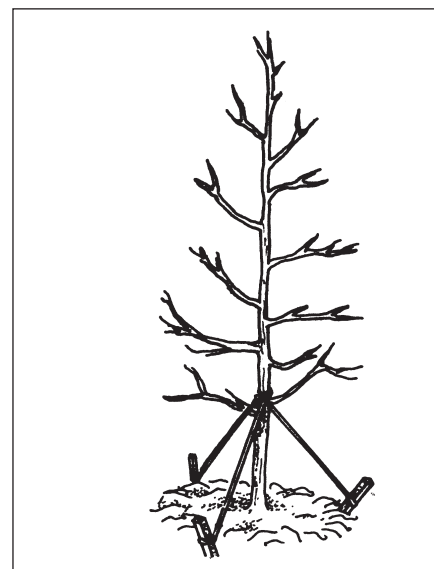
trunk. A properly installed tie will separate the tree trunk from the stake, providing a cushion. Other staking systems or newer staking technologies are available for use in certain circumstances. Contact your district or community forester for additional information.

Support the tree low on the trunk. **The purpose of staking or guying is to prevent movement of the lower trunk and root system. Movement of the top is desirable and will strengthen the tree.**

Staked and guyed trees must be checked monthly during the growing season and after storms or strong wind. The system should be snug, but not to the point of



*Figure 1. Support the tree 18 to 24 inches above the ground when staking.*



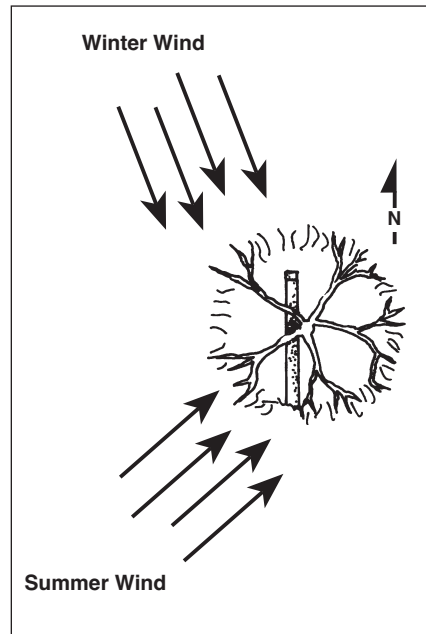
*Figure 2. The three-way guying system should be used on larger deciduous and upright evergreens trees.*

making an impression on the stem or trunk. If that happens, loosen the tie or wire around the trunk. **Do not stake or guy a tree any longer than necessary. Stakes should be removed after one growing season, but may remain in place for a second season only if additional support is required.**

### Staking Specifications

When working with a nursery, make sure to specify size and location of trees to be staked.

On exposed sites, stake deciduous and upright evergreen trees immediately after planting with a 2 × 2-inch × 5-foot stake as follows: (1) position the stake along the west side of the tree so the prevailing winds will move the tree away from the stake (Figure 3). (2) Drive the stake (pointed to the north) 12 to 18 inches into undisturbed soil outside the planting pit at a 45-degree angle, crossing and supporting the trunk 18 to 24 inches above the soil surface (Figure 1). Pointing the sharpened end toward the north causes the prevailing summer winds to drive the stake into the ground. (3) Secure the trunk to the stake using commercial ties or a wire tie protected by a rubber/vinyl length of hose or pad in a loose figure eight



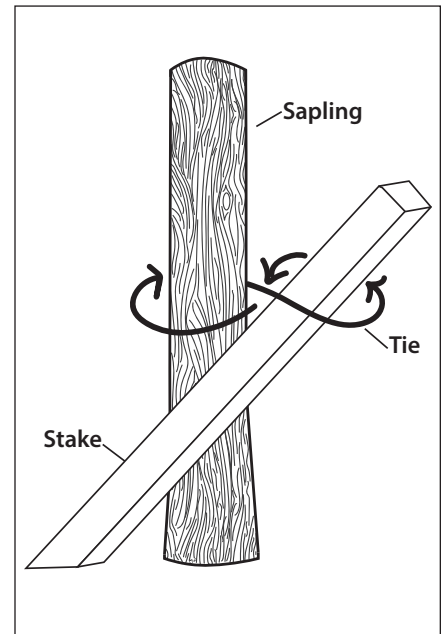
**Figure 3.** When staking a tree, place the stake so the prevailing winds move the tree away from the stake.

shape shown in Figure 4 so the bark will not be injured and the trunk will not rest against the stake.

### Guying Specifications

Specify size and location of trees to be guyed when working with a nursery.

On exposed sites, deciduous and upright evergreen trees should be guyed immediately after planting with a three-way system (Figure 2). Drive three 2 × 2 × 18-inch support stakes 10 to 12 inches into the



**Figure 4.** The figure eight tying system loosely secures the tree to the stake while protecting the bark from the stake.

ground at approximately 120 degrees from each other outside the planting pit. Position stakes so that guy wires will be located at 45- to 60-degree angles from the ground. Guy wires should be No. 9 wire or larger and attached to commercial ties or pass through a rubber or vinyl length of hose. The wire must not come into contact with tree bark. Generally, wire support should be located near the lowest main branches on the tree.

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