



# Non-Plant Items

## To assist with Conservation Tree Planting

### Weed Barrier Fabric

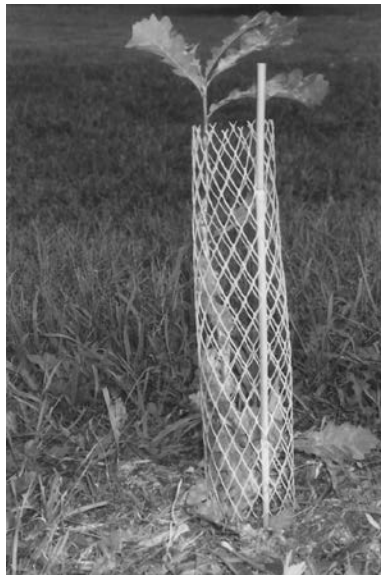
Weed barrier fabric is a woven, polypropylene fabric used to enhance survival and growth on tree and shrub plantings. It allows water to penetrate, but does not allow weeds to grow through it, eliminating much of the labor involved in establishing seedlings. The Kansas Forest Service provides the fabric in units of 25 pieces of 4- by 4-foot fabric and 125, 10-inch wire pins to secure the fabric to the ground.

The fabric is guaranteed for five years against deterioration from sun damage. The first sign of deterioration is white to gray spots about 3 to 4 inches in diameter. The next phase is separation of ribbons, usually lengthwise on the fabric. Finally it becomes a cigar-ash like material and disappears.

The fabric is effective at conserving soil moisture, but it does not generate water. If the soil is dry when the seedlings are planted, the seedlings should be watered thoroughly. The fabric sheds water until the sun breaks down the silicone used to enhance the weaving process. After about three to four weeks of exposure to the sun, it allows penetration of 9 gallons of water per square foot per minute.

It is best to till the planting spot to kill existing vegetation and loosen the soil for rapid seedling root development. Plant the seedling and water it thoroughly to settle the soil around the roots and to ensure that there is adequate soil moisture. Supplemental watering is needed after the initial planting for one to two years.

Pull the seedling through the center opening. Place pins in the four corners and the center of the fabric. The 10-inch pins tend to work out of the soil until they are pitted from soil moisture. They may have to be shoved back into the



*The correct way to install rabbit protective tubes.*

soil occasionally for a couple of weeks, then they will hold well on loam or clay soils. On lighter soils, a shovel of soil may have to be placed on the corners to secure the fabric. If weeds grow through the seedling hole, pull the weeds out before they become well established.

Weed barrier fabric should not be considered a “plant them and ignore them” practice. Regular inspections are needed to check for problems such as insects or rodents building homes under the fabric, weeds growing through the planting hole, wind lifting the fabric, bark injury due to rubbing fabric, and need of supplemental watering.

**Caution:** Fast-growing plants can fill the center hole before the fabric deteriorates, causing the fabric to girdle the plants. This may result in the death of the tree or shrub. The center hole may have to

be enlarged as the plant develops to prevent damage.

### Rabbit Tubes

Rabbit protective tubes are an economical and effective method for protecting young seedlings from rabbit damage for up to three years. Constructed of a tough but flexible combination of polyethylene and polypropylene, the tube is extruded in a diamond mesh pattern that, when placed over the seedling, will allow for lateral growth. During extrusion, ultraviolet inhibitors are added that enable the tube to remain on the seedling as long as necessary, and then photo degrade (break down) when the seedling has grown to a point of establishment where minor browsing will have much less effect on seedling survival.

The Kansas Conservation Tree Planting Program offers the tubes in units of 25. The tubes are approximately 4 × 18 inches. They are sufficiently rigid to stand upright

when supported by a 24-inch bamboo stake (25 stakes are included in each unit). To maximize shipping and storage efficiency, the tubes are shipped nested (one inside of another). This nesting procedure results in a plus or minus ½ inch variance of outside and inside tube diameter measurements. If upon arrival, your tubes appear to be flat, simply place the tubes in warm water and within minutes they will flex back to their original shape.

The bamboo stakes are strong, thick-walled, and rot-resistant and will last as long as the tubes. Weave a stake through the diamond mesh openings of the rabbit protective tube. The stake should begin on the outside of the tube and finish with the stake on the inside.

Animals have been known to destroy newly planted seedlings the first night after they are planted. Although tubes can be placed over the seedlings later, tubes should be installed the same day the seedlings are planted.

Although they have been used successfully on many plantings, occasionally wildlife have pulled out the stakes or chewed on the tubes or stakes.

## Tree Protective Tubes

Tree protective tubes are an effective method to protect deciduous trees from rabbits, deer, and mechanical injuries. The tubes are available as 4-foot and 5-foot tall, translucent polyethylene cylinders that allow enough light transmission to reach the seedling. They are thick enough to prevent injuries from rabbits, deer browsing and rubbing, and mechanical injuries from weed eaters or lawn mowers that often occur to seedlings and small-diameter trees. Tree tubes are designed for use on deciduous trees, they are not to be used on shrubs or evergreen seedlings.

In addition to providing protection from injury, the tubes also create a “mini-greenhouse” for the seedlings, which increases survival and growth. Because the tubes physically restrain the seedlings from outward growth, the seedlings focus on upward growth and often will begin growing out the tops of the tubes after two to three years of being protected.

Although the protected trees will be much taller than an unprotected tree, because the plants are not subjected to

the wind, the tree’s diameter will be much smaller than if it were growing unprotected. If the tube is removed soon after the seedling begins to grow out the top, it will not be large enough in diameter to support itself and the seedling will fall over. Therefore it is important to leave the tube on the plants until the tree largely fills the cavity of the tube.



*Tree tubes protect seedlings and foster growth.*

Tubes also can be installed on older stock that has been severely damaged. For example, tubes can be placed over an older seedling that has been heavily browsed by deer.

Tree tubes are available in 4- and 5-foot heights and are approximately 4 inches around. They are sold in multiples of fives and come with a stake and zip-ties to anchor and support the tube. It may be necessary to drill new zip-tie holes in the tube in order to adequately secure the tube to the stake.

To establish, simply place the tube over the plant so that the vents (the pre-drilled holes in the tubes) are at the top. Slide the provided stake through the zip-ties and pound the stake into the ground at least 12 inches or until the stake and tube feel secure. Blue birds can enter the tops of the tubes and become stuck, so it is recommended to cover the tops with cheesecloth or another vented material to restrict top entry. It is advised to periodically check the tree tubes to ensure that wildlife or weather have not loosened the stake, thus allowing the tree tube to begin rubbing on the seedling, which may damage the seedling.

## Root Protective Slurry

Root protective slurry is a super-absorbent polymer. It is a nontoxic and nonirritant compound with an absorption rate of more than 500 times its weight in water. As a root dip, it protects sensitive roots from drying during the planting operation and absorbs water from the soil, which is readily available to the roots. It also can be incorporated into the backfill. It is sold in ½-pound units.

**Directions:** Mix 1 rounded teaspoon of polymer to 1 quart of water and stir until it makes a pasty solution. Dip bare root into the slurry and move the seedling around to ensure the roots are coated. One package treats 300 seedlings.

For questions about compliance with USDA civil rights issues, contact the Kansas Forest Service at (785) 532-3300 or [www.kansasforests.org/civilrights.html](http://www.kansasforests.org/civilrights.html)

**Kansas State University Agricultural Experiment Station and Cooperative Extension Service**

K-State Research and Extension is an equal opportunity provider and employer. Issued in furtherance of Cooperative Extension Work, Acts of May 8 and June 30, 1914, as amended. Kansas State University, County Extension Councils, Extension Districts, and United States Department of Agriculture Cooperating, J. Ernest Minton, Director. 2,250 | 11/2019