



Fabric Mulch for Tree and Shrub Plantings

What is Fabric Mulch?

Fabric mulch (often referred to as Weed Barrier, one of many brand names) is used to reduce vegetative competition in newly planted trees and shrubs. This is accomplished by applying fabric over the top of trees and shrubs after planting, cutting a hole in the fabric, and pulling the trees and shrubs through the hole. It is made of a black, woven, permeable, polypropylene geotextile that can withstand the trampling of deer and deterioration from sunlight. Fabric mulches conserve soil moisture by reducing evaporation. Fabric mulches eventually biodegrade,

though most last well beyond the time necessary to establish tree and shrub plantings. Excessive durability results from inordinate specifications and from shade created by trees and shrubs that prevents deterioration. New products are being tested to address this issue.

When Should Fabric Mulch be Used?

Fabric mulch is appropriate to help establish windbreaks, shelterbelts, living snowfences, and other small tree and shrub plantings. Fabric should be used with

caution in riparian areas that flood periodically. Flooding can lower the effectiveness of the mulch by dislocation and soil deposition. Fabric mulch inhibits root sprouting of shrubs. Root sprouting increases stem density, providing valuable wildlife habitat.

Fabric Mulch Specifications

Fabric mulch is available in a variety of sizes and specifications. It can be purchased in rolls that can be applied by machine, or in squares that can be applied by hand. Rolls may contain from 300 to 750 feet of fabric and range from 4 to 10 feet wide. Six-foot-wide fabric rolls are the most common in Kansas. Square dimensions range from 3- by 3-foot to 6- by 6-foot. However, 4- by 4-foot squares are most common and are secured to the ground with wire pins. Fabric squares generally are used on small plantings or when land is inaccessible to mulch-laying machines. Some product specifications that should be considered include weight, tensile strength, burst strength, tear, permeability, thickness, and UV exposure. Some of the more popular brand names used in Kansas in conservation tree plantings are Lumite, Sunbelt, and Earthmat.



Six-foot wide fabric mulch designed to prevent tree girdling.

How is Fabric Mulch Applied?

A tractor-drawn dispensing machine lays fabric rolls over seedlings immediately after planting. Installation begins by placing a roll on the machine spool (Figure 1). Fabric mulch is designed to dispense from the bottom of the roll. Before lowering the packing wheels, unroll enough fabric in a straight line to clear the rear shovels. Carefully lower the packing wheels onto the fabric. Do not crawl under the machine. Cover the end of the fabric with 6 to 10 inches of soil. At first, someone may need to stand on the edge of the fabric to keep it from moving. Adjust the machine at the three-point hitch so the rear shovels are 4 to 6 inches into the soil.

Front-mounted discs open two furrows while the packing wheels press the fabric edges into the furrows. Packing wheels hold down the edges until rear shovels throw 6 to 10 inches of soil on the fabric edges. During installation, it is important to make sure soil is covering the fabric edges. If the fabric is installed on a slope, water diversion bars should be

angled out of the soil to direct water away from the fabric.

To apply fabric, one person sits on the fabric machine and makes a small cut in the fabric to locate each tree or shrub. Depending on the size of the planting, one to three people follow the machine and make finishing cuts in the shape of an “x” or “+” and pull plants through the fabric. Care should be taken to avoid cutting plants. Cuts should not exceed 12 inches in length. When excessive cuts are made in the fabric, weeds and grasses will emerge next to the tree or shrub and reduce mulch effectiveness. Though limiting the size of cut is important, it must also be large enough to prevent fabric from rubbing against seedlings. This is the advantage of an “x” cut instead of a single-slit cut.

It is important to pull seedlings through fabric immediately, especially on warm days because the heat generated underneath the fabric can quickly kill tender seedlings. It is also possible for the lower portion of seedlings to be damaged by heat if the fabric is not pushed down against the soil surface. Air pockets can create

an oven-like effect if left between the fabric and the soil. Rodents can also use this space for habitat. These problems can be reduced by walking down the middle of the fabric while pulling seedlings through or by running tractor tires along the edges of the planting furrows before installing the fabric. Tractor tires also may be run along fabric edges after installation to pack soil and further ensure that fabric will be held in place. Pins or staples should be placed every 10 feet next to a tree or shrub in the middle of fabric for anchoring purposes. When installation is going well, 100 feet can be installed in one minute. However, it is best to be patient and avoid improper installation.

Fabric squares are installed by hand. If fabric squares are purchased without cuts, make cuts before installation. The squares are held in place using wire staples (9- to 11-gauge). On clay and loam soils, 6- to 8-inch staples are adequate. Sandy soils require staples at least 10 inches long. Usually five staples are used per square (one at each corner and one next to the seedling, Figure 2). It is easier to apply fabric squares when the soil is moist and it is not windy. Fabric squares work well when mechanical equipment cannot be used and for tree plantings of 300 trees or fewer.

Site Preparation

Site preparation is important for seedling survival, growth, and proper application of fabric rolls. Inadequate site preparation can make proper fabric installation difficult. Soil must be plowed or chiseled to a minimum depth of 12 inches followed by disking or rototilling to remove clods or sod. If a desirable vegetative cover exists, cultivate a minimum 10-foot-wide strip at each tree row. Applying postemer-

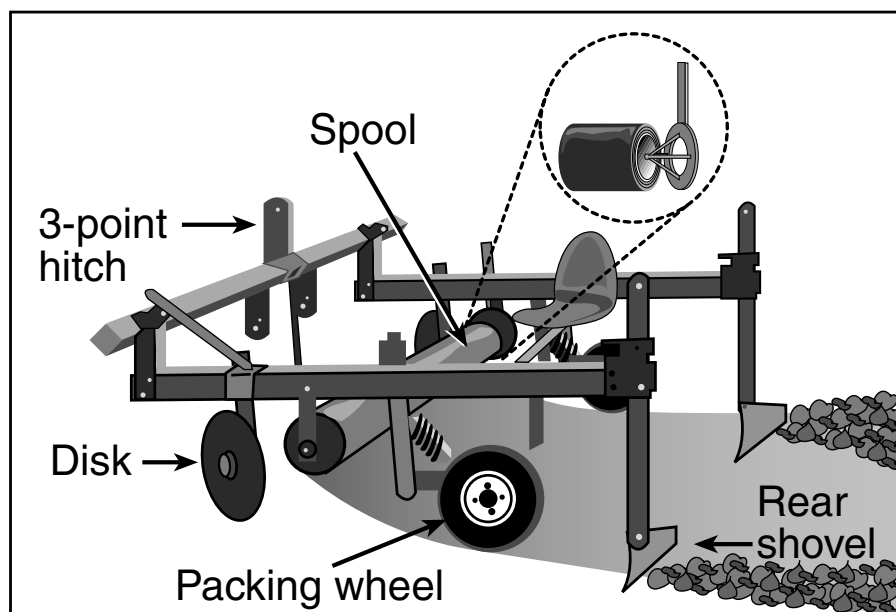


Figure 1. Fabric mulch dispensing machine.

gent herbicides may be necessary if cool-season grasses like brome or fescue are present. Site preparation for fabric squares also may include a post emergent herbicide application, rototilling, or using augers.

Maintenance

Some weeds and grasses will emerge next to trees. It is important to walk the tree rows two or three times during the growing season to pull weeds and grasses. Keep the edges and ends of fabric mulch covered with soil.

If weeds grow tall enough to compete for light and fall over fabric and trees, mowing between tree rows or at least along fabric edges may be necessary. In most other cases, leaving vegetation between rows reduces damage from desiccating wind and provides excellent wildlife habitat. Mowing should always occur in the fall to remove winter habitat for damaging rodents. In some cases, fabric mulch may girdle trees as the diameter of the tree exceeds the original hole. In such cases, the fabric hole should be enlarged to accommodate the tree.

Summary

Fabric mulch can be obtained from a variety of sources including county conservation districts, Kansas Department of Wildlife and Parks, Kansas Forest Service, private wildlife organizations, or directly from the manufacturers. Fabric mulch is more expensive than other methods of weed and grass control. However, cost-share programs may assist with the cost of purchasing and applying fabric. Some studies show survival and growth rate of trees and shrubs, as well as the amount of soil moisture, increase with fabric mulch use.



Figure 2. Five staples are used to hold fabric squares down.

Recommended Publications

Tree Planting Guide, L-596

Conservation Tree Planting Schedule, L-871

Synthetic Weed Barrier Mulches for Promoting Survival and Growth of Tree Seedlings, SRL-135

NRCS Kansas Forestry Technical Note, KS-9

Windbreaks for Kansas, MF-2120

Weed Control Options in Tree Plantings, L-848

Chemical Weed Control in Tree Plantings, MF-656



This publication is made available in
cooperation with the USDA Forest
Service.

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Atchison, *Fabric Mulch for Tree and Shrub Plantings*, Kansas State University, August 2004.