



Weed Control Options in Tree Plantings

Simply put, a weed is any plant growing where it is not wanted. It can be a grass, broadleaf plant, shrub, vine, or a tree. A weed often has a well-developed root system, which uses nutrients and soil moisture better than a newly established seedling, and can even reduce mature tree growth by as much as two-thirds.

Not only do weeds reduce survival and retard growth, they provide fuel for fires and harbor animals that feed on seedlings such as mice, rabbits, and other small mammals.

Establishment periods for tree and shrub seedlings generally take at least 3 years and will take longer on poorer sites. Therefore, it is important to control weeds to maximize seedling survival and growth.

There are four main ways to combat weeds — mechanical, chemical, mulch, and barrier.

Mechanical

Cultivation is the most effective method of mechanical weed control and includes the use of equipment such as rototillers, discs, hoes, and other similar pieces of equipment. Cultivation should be limited to less than 4 inches deep and no closer than 9 inches to the plant to avoid damaging seedling roots. Because weeds need to be kept less than 6

inches tall, cultivation will have to be done several times a year.

Another method of mechanical weed control is mowing. Although mowing reduces the buildup of fire fuel and animal cover, it can actually encourage undesirable perennial grass establishment and increase competition for moisture and nutrients; therefore, cultivation is preferred. However, mowing may be necessary on sites where cultivation creates excessive soil erosion.

Chemical

Herbicides can be a safe and effective way to control weeds. They are available in either granular, dust, or liquid formulations and can be applied using motorized equipment or by hand with back-pack sprayers and canisters. No matter what the formulation, or how applied, it is extremely important to select the proper nozzles, calibrate equipment, and follow the label directions. It is against the law to apply herbicides not in accordance with the label and the applicator may be liable for damages caused by improper application.

Selection should be based on the trees and shrubs you want to protect and the weeds you want to eliminate. *Chemical Weed Control In Tree and Shrub Plantings*, MF-565, is an excellent Kansas Forest

Service publication for selecting herbicides to best fit your needs.

Preemergence herbicides are generally applied over dormant seedlings in fall or early spring to inhibit weed seed germination and development. They are usually most effective when applied to bare soil and often require rainfall, irrigation, or light tillage to activate. While most products may require two or three applications, as well as other weed control options in a single growing season, some may require only one application.

Postemergence, or “contact” herbicides are applied directly to actively growing weeds and have no lasting effect in the soil. Several applications will be necessary throughout the growing season. While some postemergence herbicides can be safely applied over the top of desirable trees and shrubs, many cannot. Read and follow label application directions carefully. Desirable plants can be protected by shielding them with a stovepipe, or other means, or by using drift guards on the applicator wand.

Mulch

When establishing a small planting, organic mulch can be a very effective way to combat weeds. However, on a large scale planting it may be cost and labor prohibitive.

Mulch not only reduces weeds but retains soil moisture, adds

organic matter, and reduces potential seedling injury by eliminating the need to mow or till close to the plants.

Immediately after planting, mulch should be added approximately 2 to 3 feet around each seedling, and about 4 inches thick. Suitable mulches include wood chips, straw, shredded newspaper, sawdust, and ground bark.

Barrier

The most common type of barrier is a black polypropylene material called weed barrier fabric. It is permeable to air and water but not sunlight, so plant growth is eliminated underneath the material. However, if the top of the material is not kept clean of debris, vegetation

can grow through the material from the top downward.

The material, commonly sold in 300 to 500 foot rolls, is applied by an implement over the seedlings immediately after they have been planted. An "X", approximately 6 inches long, is cut in the material at each seedling location and the plant is pulled through the opening.

The fabric is photodegradable, meaning that it breaks down over time in direct sunlight. A potential downfall with fabric is that as seedlings mature and shades the material it fails to break down. If the "X" at each seedling location is not lengthened, the fabric may girdle maturing plants. Therefore, it is recommended that 3 to 5 years after planting the seedlings the plants should be

closely examined to ensure that they are not being girdled by the fabric.

Combination of Methods

The best way to combat weeds is to use a combination of practices. For example, mulches can be added around individual plants, a chemical treatment can be applied to eliminate weeds within the rows, and mowing between rows will reduce fire fuels.

If you are not sure how to create a successful weed control program, assistance is available from your local K-State Research and Extension agent, County Conservation District/Natural Resource and Conservation Service office, or from the Kansas Forest Service.

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