

When can I plant grass in my shelterbelt?

This is a question we hear often from landowners with new shelterbelts. The answer is **never**. Moisture is one of the limiting factors in tree growth. Contrary to popular belief, tree roots do not grow down until they reach water. The major feeder roots which trees rely on to provide water and nutrients are only six inches to eighteen inches beneath the soil surface. The roots can extend laterally 1 ½ to 2 times the height of the tree 360 degrees around the tree. It is true that tree roots do go deeper than 18 inches but all these roots do is help anchor the tree. This provides the tree with a large area to obtain water and nutrients. If you plant grass into a shelterbelt, you are introducing a plant that produces a carpeting root system three inches below the soil surface. During times of low or infrequent rain the grass is going to receive the available moisture, not the trees. Healthy windbreaks should be designed to regenerate themselves thus reducing the need for costly renovation when the trees become old and decadent. Most tree seeds need to fall on mineral soil to germinate. Grass produces a heavy layer of dead grass above the mineral soil. Since the seeds can't get to the mineral soil, they do not germinate and grow. This can lead to a very expensive and labor intensive renovation process.

So what can I plant?

While clean cultivation may be the best option, two plant materials that can be used are millet and wildflowers.



Two year old shelterbelt with millet planted between rows.

Millet

Millet is a plant that comes from the Nile area of Egypt. Millet has a simple root system that does not form a root carpet, and doesn't require much moisture. An other advantage of millet is that it is not shade tolerant. As the trees grow and close the canopy, millet dies out due to lack of sunlight. Millet prefers a well drained soil that is slightly acidic to neutral pH (4.8 to 7.0) with good water holding capacity. Use a self sowing variety of millet to avoid replanting each year. However, you will not be able to harvest this crop if you wish to have millet the following year. Do not plant millet until the trees have gone through one growing season. This allows the trees to root and makes tree replacement replanting easier. Millet also provides excellent food for wildlife like pheasants. If creating wildlife habitat is one of your goals, this is a good choice. One disadvantage of using millet is that it can increase tree damage from rodents like rabbits, mice, and voles. Normally predators like fox, coyote, and raccoon will manage rodent problems. If fabric is used in the shelterbelt, management of mice and voles could be a problem

requiring the use of chemical rodent control.



Inside a sixteen year old belt which had millet planted between the tree rows. Millet has been shaded out from lack of sunlight.

Wildflowers

A mixture of native wildflowers works well and may provide a more esthetically pleasing planting for shelterbelts. Wildflowers require well-drained soils with a pH level of 5.5 to 8 and six to eight hours of direct sunlight per day. Woodland type plants can flourish in shaded area, but most need a certain amount of direct sunlight. Highly acidic soils or soils with low organic matter need to be avoided. Care must be taken to completely eliminate sod-forming grasses, as they can cause future competition for both flowers and trees. The seedbed should be firm and free of clumps prior to planting. Native species include: Black-eyed Susan, Blanketflower, Blue Flax, Butterfly Milkweed, Lance-leaved Coreopsis, Prairie Blazing Star, Grayhead Coneflower, Partridgepea, Plains Coreopsis, Purple Coneflower, Purple Prairieclover, Upright Prairie Coneflower, White Prairieclover, Wild Ber-

gamot, New England Aster, Dwarf Red Coreopsis, Illinois Bundleflower, Leadplant, Lemon Mint, Mexican Red Hat, Pale Purple Coneflower, and perennial Lupine. The annuals will provide first year flowers but most of the perennials will bloom after the first year of growth. Be sure no grass is included in the mixture. Colors favor different hues of purple, blue, red, yellow and white and will change throughout the growing season. Flowers prefer sun to partial shade, so as the tree canopy closes the flowers will die out.



A new planting with fabric mulch. Wildflowers have been planted between rows.

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What Can I Plant To Help Control Weeds In My Shelterbelt?



Plant trees and enjoy the benefits they will provide.



South Dakota
Department of Agriculture
 Division of Resource Conservation and Forestry