Cool Season Lawns

Lawns are often demonized by those wishing to conserve water in landscapes. However, small lawns can be strategically located and provide benefits such as reduced energy consumption (cooling effect), soil stabilization, and dust control. Of course, turf areas also require mowing, regular irrigation, seasonal fertilization, and periodic renovation. Pets also enjoy lawns.

Cool season lawns are those which stay green year-round. Cool season grass species suitable for our area are blends which contain a mix of Kentucky bluegrass, perennial rye, and fine fescue, or pure tall fescue (select a fine-bladed turf-type). If the leaf tip has a "boat-shape" rather than a flat blade, then it is KBG. Tall fescue can be easily identified by firmly holding the tip of a leaf blade, pulling it so the leaf edges pass lightly between your thumb and forefinger. If it feels a little like a saw blade in this direction and is much smoother when pulled in the opposite direction, then it is tall fescue. The cool season blend is finer textured and more lush, but requires slightly more irrigation. Tall fescue is often coarser in appearance, but is more drought resistant, especially when mowing height is high.

Soil Preparation

If you are considering a new cool season lawn, August is a good time to begin. Weeds should be controlled prior to soil preparation and planting. If bermudagrass or other perennial weeds are present, you will need to kill them with a glyphosate herbicide. This may require repeated applications. Soil should also be amended by tilling in nitrogen, stabilized or composted organic matter and phosphorus fertilizer. Remove rocks and large roots, and then roughly grade to create gentle slopes that drain surface water away from structures.

Irrigation System

At this point, the irrigation system should be installed. A well-designed irrigation system with head-to-head coverage and an automatic timer is highly recommended for cool season lawns. If you are unsure of how to design and install the irrigation system, hire a reliable professional. Just prior to planting, apply 10 pounds of 10-10-10 fertilizer (or equivalent) per 1,000 square feet and lightly rake it in. Light rolling with a water-filled roller will indicate any low spots or other irregularities to the area. A proper final surface will be firm enough to prevent ruts made by seeding equipment but will be loose and crumbly so that seed easily can be raked into the top 1/4 inch of soil. Once these steps have been properly followed, you are ready to install a turf by seeding or sodding.

Seed or Sod

Seeding is less expensive than sodding, but you will almost certainly have annual weeds that may be controlled using a selective herbicide such as 2,4-D. Small areas can be seeded by hand. A rotary-type fertilizer spreader can be used in larger areas. Try to apply 5 to 10 seeds per square inch. Heavier seeding will promote weak, spindly seedlings and spotty establishment. Calibrate spreaders to supply half the amount of seed in one pass over the area. Divide the amount of seed to be

sown into two groups. Spread the first group of seed. Then spread the second group at a right angle to the first group to get even coverage.

Sodding has the advantage of almost immediate establishment, but its disadvantages are initial cost and the high amount of labor involved. Choose high-quality sod that is actively growing. Sod is perishable and should not remain on the pallet or stack for more than a few hours. The presence of mildew and distinct yellowing of the leaves is usually good evidence of reduced turf vigor from being stacked too long.

To lay the sod, start with a straight edge such as a driveway or sidewalk. Unroll sod pieces tightly against each other, but don't overlap. Lay the pieces in a staggered, bricklike pattern. Using a sharp knife, cut pieces to fit curves or small areas. After the sod has been laid, roll it to ensure good contact with the soil. Be sure to water thoroughly, and water every day during dry, warm weather. Avoid soggy situations.

Fertilizing

Fall nitrogen fertilization of all cool season grasses should be one pound of actual nitrogen per 1,000 square feet (about 5 lbs ammonium sulfate 21-0-0) in both October and November. Most fertilizer bags will also tell you how much of their product to use. Spring fertilization is also recommended for cool season grasses. Half as much (1/2 pound of actual N per 1,000 square feet) should be applied in both early April and mid-May. Fertilizer should not be applied to cool season lawn in the heat of summer. Summer is a resting time for cool season turf.

Mowing

Many lawn owners are misinformed about how to care for turf. The most common misconception is: mow your lawn as short as possible to avoid frequent mowing. Low mowing actually stimulates turf growth and triggers a stress response in the grass. This stress is a negative effect on the grass and increases water consumption, increases fertilizer (nitrogen) demand, and reduces lawn density allowing weeds to establish.

The number one rule of lawn mowing for all species and varieties is: **never remove more than one third of the height of the grass at one mowing**. If more needs to be removed, do it gradually over the next couple of mowings. The longer the blade length, the more leaf area the plant has. Greater leaf area allows it to produce more photosynthate (sugar) and store more energy in the roots. This stored energy is a reserve that allows the grass to survive stressful periods. Grasses don't thrive on mowing, they merely tolerate it

The number two rule of lawn mowing is: **keep the lawn mower blade sharp**. Dull lawn mower blades whip the grass rather than slicing it cleanly

Lawn mowers are dangerous and care should be taken when using them. Follow the instructions that came with the mower and do not remove any of the safety equipment. Before sharpening the blade(s) always disconnect the spark plug wire or unplug the mower. Sharpening the blade on a rotary mower is not difficult, but the blade needs to be balanced as well. Reel mower sharpening is more difficult and requires more specialized equipment.

Contrary to popular belief, leaving the grass clippings on the soil surface contributes very little to thatch build-up when proper mowing is practiced. With proper mowing height and frequency, clippings will decompose rapidly. However, excess clippings left on the lawn will weaken the turf. If long blades are sitting on top of the grass, then they should be removed. Mulching mowers chop the clippings in finer pieces and increase the decomposition rate. At any rate, allowing clippings to stay on the lawn will decrease fertilizer needs by up to 25%.

Some final lawn mowing tips. Avoid mowing wet grass, but during rainy weather it is better to mow the grass wet than let it get too tall. If it does get too tall, cut only one third of the total height at any one cutting. You may even need to only cut a one-half to three quarter swath rather than full width. When leaving the clippings on the lawn with a side discharge mower, mow in the direction that puts clippings onto the area that has already been mowed rather than concentrating the clippings in the center of the lawn.

Dethatching and Aeration

KBG and KBG mixtures can require dethatching. Compacted soils and areas with poor drainage can also benefit from aerification which should be done in early to mid October.

Thatch is formed from the dead shoots, roots, rhizomes, and stolons that accumulate just above the soil surface. These plant parts are more resistant to decomposition than grass clippings (leaf clippings rarely contribute to thatch). KBG produces more thatch than other cool season grasses because it spreads by rhizomes (underground shoots). To test your turf for thatch, slice a pie-shaped wedge of grass from your lawn and measure the depth of dead material accumulation. Thatch at depths of ½ inch or less is not detrimental to turf grasses. Thatch depths greater than ½ inch can cause many turf grass problems including: poor rooting; disease problems, insect infestations, dry spots, and increased potential for scalping when mowing.

Dethatching is an injurious process and should only be done at times when the turf is most likely to recover from the treatment. The proper time is in the fall. Dethatching equipment (verticutters) can be rented from equipment rental yards. Make sure the equipment is set to treat at a depth to remove the thatch buildup and not the entire grass plant.

Aeration is not a substitute for dethatching. Aeration is usually achieved through the use of a core aerator. This machine takes out small plugs of soil to allow better water penetration, reduce compaction, and promote deeper roots. This is most important in situations where traffic is high and water penetration is poor. The resulting cores can be simply broken up and redistributed on the soil surface.

Weed Management

Maintaining a healthy, vigorous grass stand is the best way to prevent and reduce weeds in lawns. However, totally weed-free lawns are rare, even when herbicides are used. Herbicides can be an effective tool, but can also be harmful to surrounding landscaping in addition to the costs, labor and equipment needed to apply them. Striking a balance between healthy turf and tolerance of a few weeds is the key to having an attractive, functional lawn.

Once weeds have become established in lawns, a strategy should be designed that makes sense for you and your household. The strategy should address the vigor of the turf, its maintenance and irrigation, and whether or not you will use herbicides. Most lawn problems are human-caused: poorly adapted turf species; inadequate or uneven irrigation; improper mowing (scalping); improper timing or lack of fertilization; soil compaction caused by various activities/practices; and other factors. If you can identify and correct these factors, your weed problem may begin to correct itself without the use of herbicides.

Correct identification of the weed species present will also help determine the appropriate course of action. Annual weeds are usually easier to control than perennials. If multiple species are present and some of them are perennials, then herbicide treatment may be appropriate. If one or two annual species are present, you may consider hand-pulling and increasing turf vigor through cultural practices. Mowing off seed heads and discarding grass clippings is one way to reduce weeds. Common annual weed species are: puncturevine, crabgrass, annual bluegrass, some clovers, knotweed, purslane, chickweed, and spurge. Common perennial weed species are: field bindweed, dandelion, curly dock, bermudagrass (in cool season lawns), silverleaf nightshade, and nutsedge.

The chemicals most readily available to homeowners for selective post-emergent control of broadleaf weeds include: 2,4-D; 2,4-DP; MCPP; MCPA and dicamba. They are available singly and in various combinations with each other. Combination products are recommended for difficult-to-control weeds or when several weed species are present in the lawn. All are available in liquid formulations (sprayable) and often in granular formulations (generally with a fertilizer) that can be applied with a drop or broadcast spreader. Read product labels before purchasing to determine weed species controlled by various products.

Post-emergent herbicides can also be used on annual grasses after they germinate and begin to mature. The most commonly sold type, called MSMA (monosodium methanearsonate), is often sold under trades names like "Crabgrass Killer." They are most effective against young seedling annual weeds and can be applied only as a spray.

In mature, older landscapes, roots of trees and shrubs often occur throughout the entire lawn area. Do not make more than two herbicide applications per growing season on lawns with trees growing in them. Two applications are probably unnecessary for most lawns. Specifically, dicamba may accumulate in the soil with frequent or extensive use and may result in damage to trees, shrubs or other ornamentals.

Remember that pesticides are tools that may be used to accomplish identified objectives. Choose whether or not to use them by assessing other weed management options including cultural practices and mechanical (direct) control. Use all pesticides selectively and carefully following label directions.

Irrigation

Lawn owners typically make two irrigation mistakes. These are: watering too often but not long enough; and applying the water too fast causing it to runoff rather than soak into the soil. These two scenarios are most often a problem in finer textured soils (clays and clay loams). Lawn sprinkler systems apply water as much as 3 inches per hour, but the typical lawn absorbs less than one-fourth inch per hour! Unless your sprinkler is on for 5 minutes, then off for 20 minutes or so for the water to soak in, you not only waste enormous amounts of water but you may start losing soil to erosion.

On the other hand, too-frequent watering encourages weeds and diseases. Keeping the surface wet encourages weed seeds to sprout and fungal diseases to flourish. Meanwhile the turf may have decreased vigor because oxygen is not available. Stretching the interval between waterings results in deep roots that can go much longer between waterings.

For lawns, water long enough to re-wet the soil six inches deep. Poke a screwdriver into the soil; if it goes down only 3 inches before meeting resistance from dry soil, start watering. You will need to have 3/4 inch of water to actually soak into the soil to re-wet it. If your soil absorbs water at the typical one-quarter inch per hour rate, count on 3 hours of on/off watering.

Lawns are functional parts of urban/suburban landscapes, and when appropriately placed and sized, provide unique outdoor living spaces for people and pets. They can also help conserve energy and, most of all, are meant to be enjoyed. Conversely, when lawns are not serving useful functions, you may want to consider removing them to conserve water and reduce maintenance headache

As you can see, establishing and caring for a cool season lawn involves work and proper care.

June 30, 2024

Adapted from original Backyard Gardener publications by Jeff Schalau, Agent, Agriculture & Natural Resources, University of Arizona Cooperative Extension, Yavapai County