

Planning and Planting Successful Lawns in Montana

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This MontGuide features insights and information on establishing a lawn. Topics include drainage, soil types, preplant fertility and seeding of new lawns.

LAWNS TIE MOST HOME LANDSCAPES TOGETHER, control soil erosion, dampen traffic noise and cool the air. But these things only happen if the lawn has been installed and maintained correctly. While this Guide addresses lawn establishment, the MSU MontGuide *Maintaining Successful Lawns in Montana* (MT202004AG) addresses maintenance issues.

Provide Drainage

Provide lawns with drainage during soil preparation. Allow at least a 1 percent slope (one foot drop per 100 linear feet or about 1 inch every 8 feet) away from the house. Slopes as great as 33 percent (one foot drop per three linear feet) will support turf, but mowing and runoff water will cause problems. Steeper grades won't do for lawns. Instead, choose a low-maintenance ground cover for these planting sites. Horizontal junipers work well on steeper grades.

If you must change the grade of a lawn, remove the top 6 inches of soil, make the grade changes, then replace the topsoil. This conserves topsoil and helps reduce unevenness in the growth and appearance of the lawn due to the presence of mixed soils. Roll, fill and rake low spots to level the surface after grading and before seeding.

Proper Soil

Modify infertile and poorly-textured soils before planting. Get a mechanical analysis of your soil from a soil testing laboratory or estimate it yourself using this method:

- Place a cup of site soil into a pint glass jar with a screw top and fill the jar with water. Add 1 tablespoon non-sudsing dish detergent.
- Swirl the soil and water until they are well-mixed, then let the soil settle overnight.

- Swirl it again the next day, then let it settle for a week. Soil particles of different sizes will settle in layers of sand (bottom), silt, (middle) and clay (top). Organic matter will float (**Figure 1**).

Use this estimate of the proportions of sand, silt and clay in your soil to determine the need for soil modification. An ideal lawn soil is a sandy loam containing about 70 percent sand, 15 percent silt and 15 percent clay.

Modify clay soils by adding coarse sand for a total soil sand content of 70 percent. The cost will be high, but small quantities of sand are ineffective and may aggravate soil problems.

Adding organic matter such as sawdust, ground bark, manure or peat moss also improves the structure of clay soils but can lead to nitrogen deficiency problems. Thoroughly incorporating 33 percent by volume (2 inches) of composted organic material into the top 6 inches of soil will substantially improve soil structure.

Organic matter also improves very sandy soils, thereby increasing water-holding capacity and fertility. To avoid the possibility of a future nitrogen deficiency caused by mulch decomposition, add about 24 pounds of actual nitrogen to each ton of organic matter to compensate for that lost to decomposition. For example, for each ton of organic matter

added, you will need to apply 80 pounds of 30-10-10, 240 pounds of 10-10-10, or about 150 pounds of 16-16-16 fertilizer.

Pre-Plant Fertilizers

Use a soil test to determine the need for nutrients, the soil pH and the presence of high levels of soluble salts. Phosphorus is fairly insoluble and moves slowly in the soil, so incorporate it prior to seeding if soil needs it. Nitrogen and potassium are soluble and can be added later. If your soil has enough nitrogen and you plant in the fall, fertilizer may not be needed until spring. If you are planting in spring, add a



Figure 1: to determine your soil texture, perform a simple DIY texture test.
BY CHERYL MOORE-GOUGH

nitrogen starter fertilizer at ½ pound of actual nitrogen per 1000 square feet prior to seeding.

Seedbed Preparation

Bring soil to a very fine granular condition and remove all clods, sod, rocks and trash during final surface preparation. Settle loose soil with a light rolling. Adjust the weight of the roller so that only your sole prints appear on the soil surface. Soil must be firm and fine-textured.

Seeding

You can seed a lawn in Montana in late April and May but seeding in mid-August to mid-September (around Labor Day) is better. Annual weeds do not have time to produce a crop of seed, and the grass has the entire fall and the early spring to become established before the heat and stress of summer.

For even coverage and seeding, sow half the seeds in one direction and the other half at right angles to the first. Do this by hand or with a mechanical seeder.

Lightly rake and roll to incorporate the seeds into the soil, but don't bury them more than 1/4 inch. Use organic mulch, such as clean straw, or hydro-mulch (wood fiber sprayed with water onto the new lawn surface) to hold moisture, reduce erosion and hasten germination. Be sure to apply it evenly and no thicker than 3/8 inch.

Grass Mixes

It is better to plant a mix of species due to variations in microclimate and shade.

For general lawn use under moderate irrigation, sunlight and fertility levels, use a mix of Kentucky bluegrass or one of its improved cultivars, creeping red fescue or its Chewings variety, and perennial ryegrass. A typical mix consists of about 60 percent Kentucky bluegrass, 30 percent red or Chewings fescue, and 10 percent perennial ryegrass. The perennial ryegrass is not permanent and serves as a nurse grass, making its presence in the mix optional.

- For shaded lawns, use the same species, but let the fescue predominate. A shade-tolerant mix should contain about 60 percent creeping red fescue or Chewings fescue, 30

percent Kentucky bluegrass, and 10 percent perennial ryegrass. Maintain lawns of these mixes at heights of about 2½ to 3 inches. Lawn mixes that contain a large percentage of perennial ryegrass or annual (Italian) ryegrass make inferior lawns in Montana.

- For semi-dryland lawns in eastern Montana, try sheep fescue or its subspecies, hard fescue, or the newer turf-type tall fescues. Because these differ in growth habit and texture, they are best planted alone rather than as a mix. Many are also clump-forming grasses and must be seeded thickly to form a decent lawn.
- Under very dry conditions or in non-irrigated Montana lawns, Fairway or Roadcrest crested wheatgrass, streambank wheatgrass, meadow brome grass and smooth brome grass are good choices. These will become brown during drought periods and should not be mowed to heights of less than 3 inches. Except for crested wheatgrass, all are rhizomatous (spreading laterally under the surface) and form a reasonably good sod. They all have similar characteristics and can be mixed. Buffalograss and blue grama grass will grow with little moisture and will form a sod that can be mown at about 2½ inches in height.

Both have less desirable blue-green leaf color and go dormant (brown) during cold weather. As a note of caution, neither buffalograss nor blue grama can compete with weeds or cool season grasses in high rainfall areas or irrigated lawns. Also note that buffalograss and blue grama green up slowly in the spring and will brown very soon after the first cold weather in the fall. Although zoysiagrass and Bermuda grass are advertised as cold- and drought-tolerant, they are not appropriate grasses for Montana lawns.

Seeding Rate

Seed Kentucky bluegrass/fescue/perennial ryegrass mixes at the rate of 2 to 3 pounds per 1000 square feet. Seed dryland grasses at the rate of 3 to 5 pounds per 1000 square feet to obtain a reasonably dense sod. Heavy seeding rates are especially important for the tufted, non-spreading grasses like sheep fescue and crested wheatgrass.



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(GENERAL)**

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