Missoula County
Integrated Plant Management
Fact Sheet No. 2
Integrated Turf Management Steps

Soil Affects on Lawns

Healthy root systems require oxygen, nutrients, a biologically-active soil, and a minimum soil depth. These can be supplied by adding or building quality top soil. Nine inches of top soil and compost should be applied ***before*** seeding in order to establish a good lawn foundation.

Plant Nutrition Affects on Lawns

Check pH and nutrient levels with a soil test. Healthy turf requires nitrogen for leaf growth, phosphorus for root establishment and development, and potassium to build healthy immune systems. Add nutrients based on your soil test. If the soil is low in nitrogen, phosphorus and potassium, add these nutrients in a 1:1:1 ratio in the spring and in the fall, and a 2:1:1 or 3:1:1 ratio in mid-summer. Research shows that three to five small applications of plant nutrients are better for your lawn than one large application. The proper amount and application time depends on the type and the variety of grass, temperature, and precipitation (i.e.
fescue lawns require only half as much nitrogen as blue grass lawns.) If the soil is too cold (<45EF.), or too wet, nitrogen fertilizer efficacy is diminished. Soil microorganisms require nitrogen, phosphorus, and a source of organic matter. A good way to add organic matter and plant nutrients to a lawn is to mulch the lawn clippings. This will supply low levels of N-P-K in a 2:1:2 ratio. If the appearance of lawn clippings left on the lawn surface is objectionable, consider purchasing a mulching lawn mower. Lawn clippings also help solve the Arough@ lawn condition caused by earthworm castings (see Fact Sheet No. 1*ACompost@.*)

Irrigation Affects on Lawns

Problems arise from both under and over watering. Know the precipitation rate of your irrigation system and how it relates to Anatural@ precipitation.

To encourage a strong root system, watering should be monitored. Rarely do Missoula lawns need daily irrigation (see Fact Sheet No. 5 *AWatering Lawns@.)*

Cultural Technique Affects on Lawns

Mowing

Keep your lawn at 2.5 inches to 3 inches
Healthy lawns require enough leaf surface to capture energy from the sun during photosynthesis. Some weeds can be managed simply by allowing lawns to grow taller. Taller grass may also pre-vent many weeds that require light to germinate.

Taller lawns require less irrigation and reduce heat stress (since grass root systems are kept cooler in hot weather). If you must mow more than once a week, you may be adding too much nitrogen fertilizer. To reduce plant stress, be careful not to cut back more than one-third of your lawn=s total height at any one mowing.

A Michigan State study reports that some turf grass eating grubs are favored by mowing lawns short (<2") because keeping lawns short suppresses predator beetles and milky spore disease.

AERATION

Aerate your lawn at least once a year to add the oxygen required by grass roots and soil microorganisms. Do not aerate the lawn during dandelion bloom as doing so creates perfect conditions for these plants to reseed themselves.

Since Missoula soils tend to become compacted, research indicates that improved growth and disease resistance can be achieved with at least one aeration per year.

Choose Species and Varieties that fit your Environment

There are many new and traditionally favorite grass species and varieties on the market, many with particular characteristics that allow them to perform best under certain environ-mental conditions. Before purchasing grass seed, evaluate your site and decide upon the level of maintenance and use you expect. Then carefully check grass seed labels and choose seed based on the following criteria:

- Shade or sun tolerance
- Disease resistance
- Water requirements (Missoula=s annual precipitation is approximately 12 inches to 15 inches)

- Growth rate (Slow growers require less mowing!)
- Intended use (High or low foot traffic)
- Weed seed content (More expensive grass seed often has a lower weed-seed content)
- Rooting characteristics (Deep rooters are more drought tolerant)