

A Greener View: Turf grass care

by Jeff_Rugg

Q: I am considering competing lawn care programs. My lawn looks OK, but I don't know if I have enough topsoil. One program seems to be more interested in the soil, and the other one has a series of products to buy. What advice do you have?

A: There are several ways a healthy plant can be grown. They can be grown in good soil without much effort; they can be grown in bad soil if they are fed enough nutrients to meet their needs and are monitored for inevitable problems; and some plants can be grown without soil via a hydroponic system.

The technology of growing lawn grasses on poor soil by feeding them chemicals started in the middle 1900s. Before this time, large lawns were often mowed by sheep and other animals that naturally fertilized the plants. Lawns in that era used clover to supply nitrogen to the soil and grass. Other broad-leafed plants were looked upon as normal. Sod was harvested from pastures where several kinds of grass were planted together.

As many new subdivisions were built after the World Wars, small lawns were planted on poor, thin and compacted soils. University and corporate research at the time was able to develop insecticides, weed killers and fertilizers to help maintain the precarious health of grass plants grown on bad soils. These same products were increasing yields in farm crops as well, since corn, wheat, rice and other crops are grasses, too. Weed killers also eliminated the clover, so lawns needed a new source of nitrogen.

In recent decades, it has been found that the use of those chemical products reduces or eliminates the natural organisms necessary for a healthy soil and healthy plant.

You will often hear people rail against lawn grasses. They will say how they have a small root system and how they need to be fertilized and treated with horrible chemicals to keep them alive. They will say other plants don't need this amount of labor or chemicals to maintain them and thus claim the other plants are better. Most lawn grasses left to grow on their own would grow to 18 inches to 2 feet tall. If allowed to grow to their normal height, they, too, would have a big root system and need far less care. It is not the type of grass that is the problem; the problem is that we mow them all the time and plant them on bad soil.

Imagine two acorns. One is planted in a small shallow tray and the other is planted outside in the woods. The indoor one is going to be a Bonsai plant that will require more care than the outdoor one. Not because it is a bad plant, but because it is being maintained at an abnormally small size.

Plants must always maintain a balance between the roots and the top. A plant can't have more roots than leaves that can supply food and it can't have more leaves than roots that can supply water.

Lawn grasses are some of the most resilient plants on earth. Few plants can have their tops cut off repeatedly and survive. They can have their roots cut off, be moved to horrible soil conditions and survive. If it is too hot, too cold or too dry, they go dormant and survive. They bounce back from a variety of ball sports that damage the top and uproot the bottom. They do this all while producing oxygen, reducing runoff and dust, cooling the surroundings and looking pretty.

Good soil is more important than a fertilization program. Most lawn problems start because the grass plant can't grow well due to a poor soil. If you take care of the lawn's soil, the grass plant will almost take care of itself. Conversely, without a good soil, you will have to work hard to take care of the grass plant. A lawn with poor soil will require more work to keep it growing and healthy, or else it will be sparse and full of weeds.

First, a good soil is alive. It is filled with worms, insects, microscopic animals, bacteria, fungi and other organisms. Plant roots are healthier when they are surrounded by organisms that are often killed when the fertilizers, herbicides and insecticides are applied. Applying fertilizers that are slow release and based on plant materials rather than chemical salts will be less likely to damage the soil. Applying a thin layer of compost to a lawn each spring will feed numerous organisms that in turn will supply the grass plant with the nutrients it needs.

To meet the nutrient and moisture needs of a plant, the soil must be deep enough so the roots can grow to their maximum potential. Healthy low-maintenance lawn grasses need a minimum of 6 inches of good topsoil. Very often, lawns survive on less than that amount, but it takes more maintenance by the caretaker to keep it

healthy. A thin cover of lawn grasses can be kept on just an inch or two of soil, but don't expect it to handle much wear and tear from activities. If other plant roots share the soil, they compete for water and nutrients with the lawn grasses, so again, a deeper soil is better.

The last thing lawn soil must have is good drainage. Grass roots need air and water in the soil. If the pore spaces are filled with water, the roots will drown. If the soil is compacted, there are not enough pore spaces to have air or water and the roots will not be able to grow in it. Sandy soil can have too many pores and so it won't store moisture. Adding composted organic matter will benefit any soil type and help cure all of the pore space problems.

A four-step program that creates a balanced ecosystem-based diet leads to healthy plant growth. It is more efficient in maintaining a healthy lawn than a chemical-based four-step program.

The first of the four ecosystem steps towards having a thriving healthy lawn is to choose the right grass for your climate and sunlight conditions. Overseed with new grass every year or two. This adds more grass plants in thin areas before weeds grow and adds more varieties of grass that will better resist disease and weather problems. The proper grass for the amount of sunlight is very important.

Secondly, keep a healthy, deep, well-drained soil. Each spring or fall, topdress with a fine layer of compost to add natural sources of nitrogen and increase the soil depth. Aerate as necessary to keep the soil full of pore spaces.

Next, use the right tools to mow properly. Leave all clippings that are not diseased. Use a sharp blade to cut no more than one-third of the height at a time. Keep the grass plant as tall as possible. A bigger top will allow for a bigger root system.

The fourth step is to water infrequently but deeply. Deep watering saturates more soil. A deeper wet soil is like a bigger sponge that accepts a bigger root system. Frequent small waterings don't wet enough soil for the roots to grow, and can drown the roots.

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