TIPS FROM THE FIELD

TURF GRASS DISEASES AND THEIR CONTROL ON HOME LAWNS

Most diseases of turfgrass are caused by fungi. Fungi obtain their food from other living organisms and organic matter. Turfgrasses provide an ideal source of water and nutrients to the parasitic fungi.

Most of the fungi live within the canopy, thatch and upper levels of topsoil all the time. Healthy turfgrass is not affected by the presence of these fungi. Minor infections go unnoticed and the lawns recover without too much damage. However, there are times when weakened grass plants and the environmental conditions are just right for the fungi to flourish resulting in disease outbreaks of major proportions. It is now when diseases can cause considerable damage to the lawn. The damage that results is most often not the result from the fungus but from the secretion of enzymes, toxins and growth regulators of the fungus.

Unfortunately, by the time the disease is discovered and the fungus identified, the infection has spread, the damage is done and no amounts of fungicides will bring back the dead turfgrass. At this point the best we can expect is to prevent the spread of the disease into unaffected parts of the lawn.

Be aware that any condition that weakens or stresses the turf makes them vulnerable to attack by disease. Below are listed the most common stresses that result in diseases of turfgrass.

1. Over watering or no watering.
2. Over fertilization causing succulent growth.
3. No fertilization leaving weaken plants.
4. In correct soil pH levels.
5. Improper mowing habits; too short or infrequently.
6. Hard, compacted soils.

THE DEVELOPMENT OF A DISEASE

Susceptible plants, a favorable environment and the presence of the fungus are required for a disease to develop. A disease will not develop unless these factors are present at the same time and for a long enough period. Most fungi need free water on the leaf surface and the proper temperature to develop. Turfgrass managers must try to create environments more favorable to the development of healthy turfgrass plants than for the fungus pathogen. Proper turf management practices then is the most important factor when trying to prevent or eliminate a turf disease situation.

There is a series of events that are associated with the development of disease in the plant that is called the disease cycle.

1. **Inoculation** - the arrival of the fungi at the site of infection.
2. **Penetration** - entrance into the plant through wounds, stomates, or directly through the epidermal cells.
3. **Infection** - growth of the fungi in the plant tissue.
4. **Sporulation** - build up of spores. Spores must reproduce and increase in large numbers before a disease becomes epidemic. When conditions become unfavorable for spore reproduction, the disease will become inactive.

If any of these steps in the disease cycle CANNOT take place, then the disease will not spread.
TURF GRASS DISEASES AND THEIR CONTROL ON HOME LAWNS (CONTINUED)

DISEASE DIAGNOSIS

There are several fungus diseases common in the home lawn. Leaf spot, Red Thread, Dollar spot, Brown Patch, Stripe Smut, Rust and Necrotic Ring spot are just a few of the more common turf diseases. Symptoms of these diseases may often times appear the same and at other times be very different.

Before trying to determine what disease may be present in a lawn under your care, first determine if the lawn is actually suffering from a disease. Stop by the lawn in the early morning hours when the grass is wet with dew. Look for signs of fungal growth. This most often appears as a white or gray spider web-like material growing amongst the grass blades. This growth is the mycelium or active development of the disease on the leaf surface.

Once you have determined that a disease is present in the lawn then you must go about trying to identify the particular disease. Spend some time becoming familiar with the most commonly occurring diseases in your area. Not all diseases are active at the same time. Get to know what diseases are most likely to be active at the time that you are making your diagnosis. This will speed up your ability to make an accurate diagnosis and recommend cultural changes or fungicide applications to correct the disease problem.

Now that you have identified the disease you can go about making recommendations on how to control and prevent a reoccurrence of the disease. You have available for use a variety of chemical fungicides, plant protectant materials, which can be very effective when applied at the proper rates and at the correct time in the disease cycle. Remember, by the time you have made your diagnosis the disease has already done damage to portions of the lawn. Therefore, applications of plant protectant fungicides can only help those grass plants that have just become infected or have yet to be infected. Dead plants cannot come back to life.

Since the disease causing fungi are present in the lawn it is necessary for you to discuss with the homeowner cultural practices that will limit the reoccurrence of the disease. Cultural practices must be scheduled to increase the natural disease resistance of the grass plants. A healthy lawn is the best defense against diseases.

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