EARLY SEASON LAWN DISEASE PREVENTION AND MANAGEMENT

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For landscape managers and lawn care applicators spring is a time to start performing turf maintenance and making applications to insure a good start for lawns, meet customer expectations, and to minimize potential problems including diseases.

As lawns start to grow in spring there are often many unusual patterns such as variations in growth, color, and texture that can be confusing and hard to explain to the lawn owner. The transition from winter lawn conditions to spring green-up can be a difficult time to accurately diagnose lawn problems. It is important to be able to know what conditions are caused by environmental factors such as winter conditions versus fungal diseases.

Routine spring lawn care maintenance can make the difference if common early season diseases are to be avoided or minimize. Proper mowing and fertilization are two critical maintenance factors that can make the difference between a healthy stand of grass and a lawn with an unsightly disease that results in service calls.

Proper Mowing – the backbone to a well maintained lawn

Each turfgrass species has mowing guidelines for optimal growth and performance. In the spring frequent mowing, especially at times of rapid growth, is quite important to avoid stressing the turf, to maximize turf health, and to minimize problems. Some general rules are to cut the turf high, mow as frequently as possible, and to mow with sharp mower blades.

Recycling clippings is recommended to return nutrients to the turf plants and to minimize the disposal of yard waste. If the lawn becomes excessively tall, consider double cutting (mowing twice) in order to cut the clippings fine enough to fall down into the turf canopy and not suffocate the grass plants.

A commonly asked question by lawn care managers and lawn owners is whether mowing equipment spreads disease problems from one lawn to another lawn. Natural environmental factors such as wind and rain are very effective in moving the pathogen over large areas. In most cases the fungi that cause lawn diseases exist in the thatch and soil and survive for long periods of time. The outbreak of a disease is triggered by weather conditions that are conductive to rapid or sustained growth of the fungal pathogen which is already in the lawn verses the introduction of a “new” pathogen. So do not be concerned about moving pathogens on equipment, shoes, and boots. Focus on the basics of proper mowing as previously discussed to maximize turf health.

Fertilization –a key element for healthy turf

After mowing, fertilization is often considered the next most important maintenance procedure for a healthy lawn. Lawns are often grown on sites with poor quality soil. This is frequently caused by the construction process, which result in subsoil and construction debut comprising the rooting media and the original top soil is buried or gone from the site. This results in low levels of essential nutrients or deficiencies.

Before spring fertilization can be discussed the importance of fall fertilization needs to be explained. Autumn is the time when the most important applications of fertilizer are applied for cool season turfgrasses. The fall and late fall fertilizer applications are when turf recovers from summer thinning and damage and it is best prepared for spring growth and optimal health. If lawns received these fall applications at the proper timing, rates, and fertilizer product formulation the lawns will be well positioned for early spring green-up. Other benefits include a deeper root system, minimizing spring surge growth, and will reduce the severity and occurrence of diseases.

Avoid excessive nitrogen fertilization in the spring. The big question here is, 'did the turf receive a sound fall fertility program?' Lawns that were well fertilized in the fall will need less fertilizer in the spring and applications can often be delayed. If little or no fertilization was done in the fall DO NOT try and make up for it in the spring! Over fertilized in the spring, especially with soluble nitrogen fertilizer, will lead to serious problems. Diseases such as leaf spot, melting out, and patch disease problems (Necrotic Ring Spot and Summer Patch) will be much more severe. Lush over stimulated leaf growth has thin cell walls that are particularly susceptible to infection by fungal disease pathogens. Excessive soluble nitrogen fertilization also leads to rapid growth of the leaves at the expense of the roots. Even though the lawn may look great there may be a declining root system that will be ill prepared to sustain the lawn in summer heat and drought.

Avoid deficiencies in the fertilizer program. Sound fertilizer programs are based on available elements in the soil and customer expectations. The ratio of N-P-K and the need for micro elements are determined by soil tests and guidelines developed by turfgrass researchers and state Extension personnel for these programs. Most states have well developed guidelines for specific turf fertility programs. It would be recommended to contact the state land grant university or county Extension service. An example of a disease that is significantly increased in severity and occurrence due to deficiencies is red thread. Deficiencies in phosphorous and/or nitrogen significantly increase this disease.

Core Aerification - reduces soil compaction and improves turf health

Soil compacted severely limits root growth. A weak root system leads to many problems including a greater susceptibility to diseases and decline in harsh weather. Diseases such as Necrotic Ring Spot and Summer Patch, leaf spot, red thread, and rust are more severe on compacted soils.

Accurate herbicide treatments - lead to successful weed management and healthy turfgrass

Too little herbicide and weeds are not controlled. Too much herbicide and turf can be stressed leading to a weak, thin turf more vulnerable to weed problems, disease outbreaks, and a lower quality lawn. Over application of many preemergent and postemergent herbicides increases the severity of leafspot and/or melting out.

EARLY SEASON DISEASES

The following table lists some of the more common spring and early summer diseases. In general, these are not lethal diseases but can reduce the performance and appearance of turf. In many cases proper maintenance can help avoid these diseases or keep them at a low or acceptable level. In some situations a properly timed application of a fungicide may be needed to achieve the quality of turf desired by the client.

Remember there are recent changes eliminating some of the more traditional and frequently used fungicides on **residential lawns**. Because of these restrictions there is a need for a different strategy to manage some diseases in residential settings. In many cases a preventative application of a fungicide is the best approach since the availability of effective curative fungicides is now restricted. These label changes emphasize the need for accurate records and a history of disease problems in lawns so the need for preventative applications can be more accurately predicted and substantiated. These label changes and restrictions will also result in a change of how some diseases are managed and will increase the cost associated with disease management.

Know what diseases may be encountered, study them, and plan how to manage lawns to maximize turf health.

Disease Name *(Fungus Name)*	**Susceptible Grass*** **(Bold letters** note most susceptible grasses**)**	**Key Weather Factors**	**Management Strategies**
Leaf Spot/Melting Out (*Drechsler & Bipolaris* spp.)	**KENTUCKY BLUEGRASS** (Common bluegrasses) Fine fescue Perennial Ryegrass Tall fescue	Leaf Spot-Cool/Wet Melting Out/Hot Dry (Leaf Spot: spring & fall) (Melting Out: summer)	- Raise cutting height. - Mow frequently to avoid stressing turf. - Avoid excessive nitrogen. - Avoid light, frequent watering and prolonged wet grass. - Preventative fungicide applications may be needed in severe cases.
Fairy Ring (Many different fungi)	All Turfgrasses	Grow over a wide range of temps. And soil moisture conditions, often favored by moist soils. Brown turf may develop in prolonged hot dry periods.	- Improve water penetration; aeration, deep watering, and wetting agents. -Remove infected soil and sod; replace with clean soil & sod or seed. - Fungicides often give unpredictable results.
Red Thread *(Laestisaria fusiformis)*	**PERENNIAL RYEGRASS** FINE FESCUE Kentucky bluegrass Tall Fescue & Bentgrass Tall Fescue & Bentgrass	Moderate/Wet Foliage Prolonged periods of wet leaves	- Follow balanced fertilization program. Avoid phosphorous & nitrogen deficiencies - Promote growth by aeration, watering etc. - Use resistant varieties. - Preventative fungicide applications may be used in severe cases.
Slime Mold (*Myxomycete* spp.)	All Turfgrasses	Moderate to warm temperatures / Prolonged wet foliage	- Mechanically remove by raking or mowing. (Causes no injury, only cosmetic.) - Fungicides are considered impractical.