

A Sports Turf Management Game plan

by Steve Wightman, Qualcomm Stadium (formerly Jack Murphy Stadium)

Sports turf management can be compared to just about any sport I know of. It involves teamwork, knowledge of your opponent, a well defined game plan, and plays that are designed to capitalize on the opponent's weaknesses and your team's strengths with the ultimate goal of winning the game.

Teamwork can be defined as a cohesive work effort that embraces the successful completing of ones desired goals and objectives. It involves leadership, training and camaraderie among the manager and the workers. Properly trained team members and the desire to "rise above the rest" will help make you a winner.

Knowledge of your opponent means gaining an understanding of who or what you are dealing with. In the case of the turf manager, this means knowing the turfgrass type and its growth habits; the soil type and its reaction to traffic and water; prevailing climatic conditions and the effect of these conditions on the turf area.

A well defined game plan simply means a written strategy that you feel is the best approach for you to win the game. The plays that you design as a turf manager are the proper cultural and renovational practices that are interwoven around the various scheduled events that take place on your fields. The manner in which these tasks are administered as well as when they are performed will determine their effectiveness in promoting healthy strong turfgrass. Plays for the turfgrass manager are mowing, irrigation, fertilization, pest control, dethatching, aeration, topdressing, overseeding and sodding.

Plays that have stood the test of time for turf managers usually involve common sense and a basic knowledge of plant, soil and water relationships.

Mowing should be done in such a way as to minimize the damage it creates to the plant. Mow at a height that is within the desired range of that particular turfgrass species. Knowledge of your opponent is very important when running this play. Warm-season grasses normally enjoy a height of cut of between 1/2" to 1". Cool-season grasses usually enjoy a height of cut of between 1 1/2" to 3". There are, of course, exceptions to every rule, however, mowing at a height outside the desired range for an extended period of time most always brings disaster to the turfgrass stand as well as the turf manager. Mowing when the grass is dry is much easier on the grass as well as the machinery. Dew and wet weather make mowing more injurious to both plant and machine while adding to soil compaction. Alternating mowing directions helps prevent grain within the grass, especially on warm-season turfgrasses. Too much grain creates matted turf which promotes shade and a thinning canopy while adversely affecting the way a ball rolls, particularly in baseball.

Irrigation should be applied only when the plant requires

it and in a manner that is most beneficial to the plant. Again, knowledge of your opponent is very important here. Remember, warm-season and cool-season turfgrasses have different water requirements. Soil types, soil structure, and the time of the year also affect water requirements. Irrigation components also dictate water delivery amounts and efficiency. Wind patterns can greatly effect irrigation efficiency. When scheduling irrigation for a turfgrass it's essential that you know how much water your irrigation system is delivering to the turfgrass. This is known as the precipitation ratio of the irrigation system. Contact an irrigation professional for help in determining this value if you don't already know. And, of course, scheduled events affect how and when you irrigate. Proper irrigation scheduling is an ongoing daily exercise and all of these variables need to be considered.

Fertilization is food for the plant and, just like a well conditioned athlete, the plant must receive a proper diet if it is expected to perform up to its maximum potential. Providing the proper type of food in the proper amount and at the proper time involves knowledge of how the plant eats. Different types of turfgrasses have different growth patterns, based mostly on air and soil temperatures. Understanding turfgrass growth habits is one of the first items in developing a fertility program. Knowing the existing soil conditions is the next item because when you fertilize with a granular you are really feeding the soil which, with water, creates a solution that is held within the soil profile for the plant root to absorb. Optimum pH range for maximum nutrient absorbancy is 6.5 to 7.0. Having a soil outside of this pH range can affect fertilization effectiveness. The farther away from this optimum pH the soil is, the more dramatic the ineffectiveness of fertilization becomes. So, it is best to take a soil sample and have it analyzed at a reputable lab to determine the condition of the soil and the amount of nutrients contained within the soil. Once that information is known, an effective fertility program can be implemented.

Pest control is another play that is included in a winning game plan. Pests include weeds, insects and diseases that, even under the best of environments, will at some time or another present a problem. In order to be able to maintain healthy turfgrass, you need to know what conditions invite these problems, how to spot the first signs of their presence and what actions to take to control them. The best defense against turfgrass pests is a healthy growing environment for the turfgrass involving proper soil conditions, adequate soil drainage and prudent cultural practices. Pests that do present themselves must be quickly identified and proper action taken in a timely manner. If need be, consult your local Extension service, or another pest professional for advise. Misdiagnosis and the

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and the subsequent improper action taken can sometimes even proliferate the pest problem.

Detaching is the removal of excessive decomposed plant material that builds up on the soil surface and adversely affects plant growth and its healthy environment. Most rhizominous turfgrasses require periodical dethatching to control this excessive decomposed plant matter. Maintaining excessive thatch invites fertility loss, water loss, excess shade and a proliferation of detrimental microorganisms, all of which adversely affect healthy plant growth. Some thatch actually enhances plant growth by tempering hot and cold air temperatures, providing an adequate growth medium for beneficial microorganisms, and adding some resiliency to the turfgrass surface. Problems occur when the thatch layer becomes excessive (usually more than 1" in depth). Dethatching should take place when the turfgrass is in its maximum growth period (spring and fall for cool-season species and summer for warm-season species).

Aerification is the play within your game plan that involves relieving soil compaction and tension so water and air can move down into the rootzone. Even the best constructed rootzones periodically require aerification, especially those with heavy traffic. Rootzones whose soil compositions include substantial clay and silt will require greater aerification to promote an adequate plant growth environment. Again, aerification should be done when the turfgrass is growing well so it can quickly repair itself from the damage created by the process.

Topdressing involves the surface application of an adequate growth medium that helps to level the surface areas and break down the thatch layer. When done in conjunction with core aerification, proper topdressing can actually enhance the aerification process by maintaining an avenue for water, air and nutrients into the rootzone for a longer period of time. Too much topdressing material applied at a given time will suffocate the plant, so numerous, lighter applications are better (usually 1/8" thickness is best with any one application).

Overseeding is the process of applying seed to an already established turfgrass area, either to thicken the turfgrass stand or to transition the stand from one turfgrass species to another. The amount of seed used during overseeding varies substantially depending on the density of the stand desired or the time available for establishment to take place.

Transitioning of a high traffic turf area where the predominate turfgrass stand goes dormant requires approx. 15 to 25 pounds of seed per 1,000 square feet. To increase the density of a turfgrass stand would require substantially less amounts. For overseeding to be successful, the seed must be in contact with the soil so that when the seedling germinates

the root can absorb the water and nutrients contained in the soil. The soil also provides adequate anchoring for the fragile plant. Proper fertilization and irrigation are extremely important at this critical time for a new plant, as are adequate amounts of phosphorous and potassium, to maximize germination and growth.

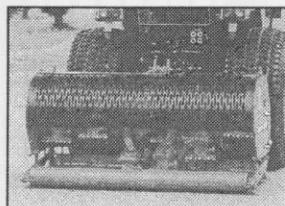
Sodding is the fastest way to provide a turfgrass surface, however, it involves more than just the green side up. Proper soil preparation and soft fertility are important. The growth medium of the sod should be similar to that of the soil it is laid on to avoid layering. Layering will greatly affect downward water movement. If layering is allowed to persist, it will eventually eliminate the turfgrass stand. Proper irrigation is, again, very important because the root system of the sod is very shallow and fragile when first installed.

As with any winning team, having a game plan based on the knowledge of your opponent, with plays that are designed and executed with precision and teamwork most always accomplishes the goals and objectives desired. A turf manager who studies his opponent, trains his players, develops a comprehensive game plan and embraces his goals and objectives will most certainly be a winner.

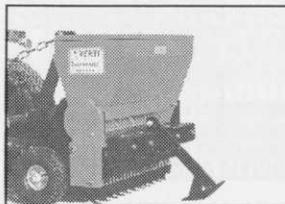
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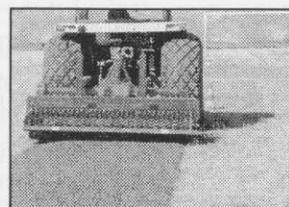
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