

Building the Safest Field on Any Budget

By Steve Wightman

As sports turf managers, we are challenged with the responsibility of furnishing a field with beautiful green grass that provides for safety, playability and aesthetics. And, the real challenge is providing all of this under extremely heavy field use that probably would be classified by many as field abuse.

The success of our challenges is dependent upon our own personal dedication, education and experience. Budget plays a vital role in the degree of success and determines one's expectations.

Expectations

To set realistic goals in building and maintaining a field requires a thorough knowledge of priorities based on the budget available. Don't expect to provide a Camden Yard or a Coors Field on a nickel! To best utilize the budget available, priorities must be clearly identified in maximizing each precious dollar. If the grass is a "Heinz 57" with every type of grass and weed there is but herbicides are not in the budget, then make it the best "Heinz 57" field with proper irrigation and mowing.

Priorities from the Ground Up

The key to maximizing the budget is setting priorities when building or maintaining a field. Before you can set priorities, you must know what the most important items are in building or maintaining a field and juggling your budget to get the most out of it.

Water is the lifeblood for healthy turfgrass, and a good irrigation system is one of the top priorities in providing strong, healthy green grass. Photo courtesy: Hunter Industries.



Turfgrass

1. Soil Rootzone Composition

The long-term success of a healthy turfgrass is dependent upon a growing medium that provides optimum physical, chemical and biological soil properties. Proper soil medium provides for adequate drainage, water and nutrient retention; beneficial microbial activity for the enhancement of organic conditions; firmness yet resiliency for safe playing conditions; maximum benefits from fertilization and irrigation; a buffer from the detrimental effects of heat, cold and drought stress; and a healthy growing medium for turfgrass that helps prevent the encroachment of weeds, disease and insects.

In other words, the soil rootzone composition is the single most important element in providing healthy turfgrass. A soil specialist or the local Extension Service is a good resource for help in determining the best soil composition for your rootzone mix.

2. Turfgrass Selection

Choosing the proper turfgrass species and variety for a specific area and use is another top priority for success. If the turfgrass selection is adapted to the specific area, then its physiological growth habits will assist turf managers in providing an optimum, safe playing surface, not hinder them.

Most turfgrasses that are rhizomious usually provide better wear tolerance and recuperative ability than the bunch-type turfgrasses. Warm season grasses are normally better suited in the southern regions where soil temperatures are above 70 degrees while cool season grasses do better when soil temperatures are below 70 degrees. In a southern region where heavy use takes place in the winter when soil temperatures are below 70 degrees, then perhaps a cool season choice would be more appropriate.

A turfgrass specialist such as a local Extension Service or university is a great resource for help in determining the best

turfgrass selection for your particular situation.

3. Irrigation

Water is the lifeblood for healthy turfgrass, and a good irrigation system is one of the top priorities in providing strong, healthy green grass. An irrigation system that is properly designed, installed and maintained will yield years of service in promoting healthy turfgrass.

Providing optimum uniformity of water distribution with matched precipitation rates from head to head should not be left to chance. Utilizing the services of a licensed irrigation consultant and contractor to design and install the irrigation system is your best insurance for success. With a properly designed and installed system, maintenance becomes a lot easier; however, the integrity of the system must be maintained by using only those products and components originally designed for the system. To intermingle different components in the same system drastically diminishes the efficiency of the system.

There exists another very important ingredient in the overall effectiveness of the irrigation system — prudent management. No matter how well the system was designed, installed or maintained, if it is not managed properly, the growth of the turfgrass will suffer greatly. Providing optimum water to the ever-changing growth habits of the turfgrass requires a thorough knowledge of the physiological characteristics of the turfgrass species and cultivar along with soil conditions, prevailing climatic conditions and field usage.

Maintenance Priorities

Chances are that most sports field managers have inherited their respective fields from a construction that took place years ago and that probably included very little thought and money. And, as a result, soil conditions and turfgrass species may be far less than ideal for

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the use to which they are subjected. It is still possible, however, to produce an acceptable playing surface by adjusting maintenance practices to coincide with existing inferior soil conditions and turfgrass cover. Obviously, the degree of aesthetics and turfgrass health suffers, which has a direct effect on expectations for that area, especially if the field is scheduled with activity that is beyond its capability.

The following list of turfgrass maintenance items are what I consider to be the most important in descending order. Obviously, there may be some, perhaps even many, who would disagree or dispute my priorities; however, they are based on developing an acceptable, safe playing surface regardless of the budget available. The list assumes that the rootzone and turfgrass species and variety are already in place.

1. Irrigation

Even if the playing surface is comprised of undesirable weeds and grasses, if it's green and thick it can provide acceptable play. Irrigation is the best insurance for keeping desirable turfgrasses alive and healthy, preventing the encroachment of weeds and other undesirable grasses. Prudent management of the irrigation system will promote the most effective and efficient use of water in maintaining good playing conditions.

2. Mowing

Having the proper mowing equipment and mowing at the proper height and in the proper manner will go a long way toward producing a good playing surface. Proper mowing techniques will enhance the surface safety, playability and aesthetics.

3. Fertilization

To get the most out of what you have requires a proper diet. With heavy-duty activity, the turfgrass must be given a chance to grow and repair itself, and a fertility program, no matter how modest, will help promote a healthier plant. Proper timing based on the physiological growth characteristics of the plant is very important. More money available in the budget gives more options and opportunity for long-term extended growth.

4. Aeration

Regardless of the soil type there eventually comes a need to open up the soil surface and upper portion of the rootzone area to relieve soil compaction. This allows water

and oxygen to flow more freely within the soil profile, creating a better growing environment and better playing conditions.

5. Topdressing

Applying a small amount of sand/soil mix to the turfgrass surface helps to level the field while creating a growing medium to assist the turfgrass in its growth expansion. It also helps to decrease excessive thatch and provide a firm, resilient surface for play.

6. Pest Control

No turfgrass area is immune from weeds, insects or diseases, and periodic control measures are usually necessary. Knowing the conditions that invite pests into the turfgrass environment is very valuable information. The timing and type of control is of equal value. A local Extension Service or university is a valuable resource for help.

7. Dethatching

Thatch in turfgrass areas is created when the rate of dead plant material (roots, rhizomes, stolons and stems) exceeds the ability of the biological community of the soil to decompose it. Excessive thatch inhibits water and nutrients from entering the rootzone. Excessive thatch can also create an environment for the proliferation of undesirable microbial activity that can present disease and insect problems. And, excessive thatch can affect the playability of the field. Players on heavily used sports fields can perform their own dethatching just by the amount of activity.

8. Overseeding

Overseeding is one of the best practices available for thickening existing turfgrass stands or changing a turfgrass stand from one species to another, such as the case with dormant warm season grasses in the winter being converted to a cool season species. The success of an overseeding program involves proper seedbed preparations, proper seeding application methods and rates, proper moisture levels during the establishment period, proper nutritional supplements and an adequate non-use period for the field in order for the turfgrass to become well established.

For programs with constant use on the playing fields, the success of overseeding will be extremely limited. Not only is overseeding expensive in terms of time and money, but to be truly successful requires the field to be shut down for a period of time for establishment to take place, something most high-use playing fields do not have the luxury of doing. For this

reason I've chosen to put overseeding way down on the list of priorities. Obviously, if adequate downtime can be afforded, then overseeding would move way up on the list of priorities; however, with daily field activity, overseeding is not much of an option for creating a turfgrass stand.

9. Sodding

The quickest way to create a turfgrass stand or to repair worn-out turfgrass is by sodding. Just as with seeding, soil preparation is a key element in the success rate of sodding. Providing the proper soil texture, structure, nutrient availability and moisture will greatly enhance the establishment, health and vigor of sod.

It's also important to remember that the sod's soil should be of similar texture to that of the prepared soil to avoid layering, which drastically affects water infiltration and percolation. Keep in mind, also, that newly sodded areas require very different irrigation regimes than those of established sod for at least three to four weeks under adequate growing conditions.

Because of this, sodding worn-out areas on a field will require a greater amount of effort and time in selective irrigation so as not to over-irrigate the existing turfgrass areas. This is also the most expensive way of providing a turfgrass stand, initially. However, when considering the overall costs of sodding versus seeding, turf managers will find that they pretty much even out when both become established.

Summary

The primary purpose of a sports turf manager is to provide a safe and aesthetic playing surface that offers the most optimum playing conditions possible. Obviously, the more time and money that is available, the more options will exist for providing better conditions.

What I've attempted to present here is a list of priorities that one can pick and choose from depending on his or her budget and represents only a set of guidelines toward maximizing the budget dollar. Each turf manager is unique with varying degrees of expectations for playing field conditions, but for the safety of the players and the health of the turfgrass, this list may be a useful tool in developing your management strategies for building the best field on any budget. □

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