TIPS FOR BETTER ATHLETIC TURF

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INTRODUCTION

Proper management of athletic turf is required to decrease the likelihood of the turf becoming a deciding factor in games. Athletes, especially skilled athletes, enjoy playing on a well maintained turfgrass surface. This is one of the reasons we have seen the move back to natural grass in professional sports. To many people, well maintained turf is even more important for safety reasons. Poorly maintained turf (divots, lack of grass, abundant weeds, etc.) can jeopardize player safety and eventually result in lawsuits. Well maintained turf is also important for environmental reasons, to decrease erosion, lessen the need for pesticides, etc. A capable field manager in a position to manage the fields for which he or she is responsible may also rightly claim a certain amount of pride and recognition for his or her efforts.

MORE TIPS THAN YOU WANT TO KNOW

Construction. Few field managers have the luxury of being involved with the construction, let alone the planning, of the athletic field they need to manage. Still, having an understanding of the planning and construction can help a manager to cope and even amend some situations. The **amount and type of use** a field will receive is important for planning purposes. A field which is used sporadically, and/or by children rather than adults, will be less challenging to manage than a field which is in constant use by adults. Soccer is typically less damaging than football, while fields which double for both soccer and football are expected to provide a playing surface usually throughout the year while single sport fields may be allowed a "rest" for recuperative purposes. The **level of expectation** of field performance is also important. High quality fields do not come cheap or easy—intensive, sometimes costly maintenance is required. The **location** of a field can also be important. A field built next to a large housing development is likely to receive frequent neighborhood play while a field built in a park away from housing will have more time between uses to rejuvenate. **Drainage issues** are especially critical. Fields constructed using native soil (loam, clay, etc.) generally must rely solely on surface drainage to avoid puddling and wet areas which are especially prone to compaction. The trend for high quality fields is to use a sand based root zone to minimize compaction and drainage problems, but sand root zones are expensive to build, costly to maintain, and unforgiving if mismanaged.

Mowing. Regular mowing which removes 1/3 or less of the leaf tissue at any one time is least damaging to grass and allows for quick recovery. Sharp blades also reduce injury and allow the grass to quickly heal the cut leaf tips to provide for more vigorous turf. Clippings rarely if ever need to be collected, instead, returning clippings acts as a slow release nitrogen source. Mow at the highest possible height to minimize traffic damage; fields used for high impact activities like football should be mowed at a higher height than soccer or baseball. Make sure to stay within the proper mowing height range for the turf species or cultivars on the field.

Fertility. Regular fertility, particularly nitrogen, is critical for providing growth and allowing the turf to withstand and recover from the effects of traffic. Overfertilization inhibits rooting and results in succulent, top-heavy growth which is easily damaged by traffic. Usually the best programs are those in which the turf is "spoonfed": the turf receives small but frequent fertilizer applications. In order to keep a turf growing to recover from damage, higher amounts of nitrogen may be required compared to non-trafficked turfs. On native soils, six pounds of nitrogen per 1000 ft^2 annually may be necessary, while sand based root zones may require 10 or so pounds of nitrogen per 1000 ft^2. Nitrogen is the most important nutrient since it controls the uptake and utilization of all other nutrients. Rapidly soluble nitrogen sources allow the field manager to exert the most control over growth because nitrogen availability is not temperature dependent and the short residual allows the manager to make frequent adjustments. In sand based fields or in situations when scarce labor precludes spoonfeeding programs, late spring/summer applications of slowly available nitrogen sources can be useful. Nitrogen inputs should usually be kept between a 1:1 and a 1:2 ratio with potassium. Native soils are rarely deficient in phosphorus. Micronutrients are rarely if ever limited in any situation.

Irrigation. Much of a turfgrass plant's growth is driven by water pressure inside plant cells (turgor pressure). When moisture becomes even slightly limited (a few percent by plant weight), growth by cell elongation ceases. Flaccid turf is unable to rapidly repair damage caused by traffic, mowing, insects, etc. which can lead to ruts, bare compacted soil, weeds, and other problems. Turf with less than full turgidity will also be damaged more by traffic than turgid turf.

Irrigation is essential for a top quality field. In fields which don't have irrigation, fight to get it if the field is important! Game fields especially should have irrigation because a high quality game field will provide the most recognition for a field manager and is most likely to be the subject of a lawsuit if an injury occurs. Irrigation is also helpful for ensuring timely availability of nutrients to the turf. Irrigation rates should be based on the turf's evapotransipiration (ET) rates, the infiltration/percolation capacity, the soil type, and the species of turfgrass. Most turfgrasses in the north central U.S. lose an average of 1" water per week but this varies depending on temperature, wind, humidity, and other factors. Replacing less than the amount of water lost per day can temporarily stop growth. Conversely, irrigating at a rate which exceeds the infiltration/percolation capacity of the soil results in runoff and puddling which may take days to correct itself. Soil moisture can be monitored with a number of different devices although prices and accuracy vary widely.

Topdressing. Topdressing is essential for providing a safe and uniform playing surface. A good topdressing program aids overseeding programs, dilutes thatch in low wear areas, and most importantly, help maintain a crown and smooths surface irregularities. Topdressing should always be of a material similar to or even coarser than the root zone. Topdressing with particles of a finer size distribution than the root zone can perch the water table, impede water infiltration, and inhibit root growth. Due to the difficulty in obtaining and applying native soils as topdressing, most topdressing is sand based. Sand topdressing will work fine on native soils, but over the years a sand based layer will build up and eventually the root zone will be largely sand. There seem to be many amendments for sand topdressing, with more on the horizon: the best advice is to proceed with caution when using non-conventional materials. *Let someone else be the guinea pig.*

Aerification. Aerification (or more properly aeration) is required on almost all athletic fields constructed on native soil. A good aerification program will alleviate the detrimental effects of compaction and provide pore space for root development and gas exchange. If soil layering is a problem, hollow tine aerification can help "mix" the soils over time and minimize problems associated with the layering. When a quick fix is needed, deep tine aerification can temporarily improve internal drainage. When equipment is not affordable, consider a group purchase with surrounding athletic field managers, or hire the service as needed.

Overseeding/sodding. Most athletic fields require frequent overseeding to maintain even a semblance of turfgrass. Perennial ryegrass is favored for overseeding despite the lack of stabilizing rhizomes found in Kentucky bluegrass turf because the ryegrass germinates so rapidly. On fields subjected to constant play the perennial ryegrass may only last one to several games. One way to increase the amount of Kentucky bluegrass seed is to pregerminate it, then apply it to the field in a topdressing mix and lightly irrigate for several days. For extremely worn areas, sod may be the best alternative. Several types of sod are available. Thick cut sod will often fail to root into the soil but provides a quick fix because of its weight—it will eventually have to be replaced. Sod grown on peat or muck soil can limit root growth into sand based root zones because moisture is likely to reside in the peat or muck and nutrient levels are higher than in the sand. Over time, the peat or muck can result in a poorly draining field and other problems related to soil layering. Washed sod may be a better choice for sand based root zones but vigorous washing can compromise the integrity of the sod, requiring time and topdressing to fill in thin areas. Big roll sod, available only within the last six years, has become the industry standard in a short time. The rolls range from 24-48 inches width and up to 75 ft length, allowing rapid sodding of large areas with few seams and providing a surface capable of almost immediate play. For quick fixes on almost any soil type, SquAyrs™ may become a staple of fields subjected to constant play. This type of portable turf provides relatively simple replacement of turf areas without concern for thin turf or establishment time because the turf is already established in these volumes of turf.

Pest control. Diseases are rarely a problem on athletic fields because the grass is often routinely damaged and the traffic disrupts the disease cycle. Insects, and especially weeds, can often be problems. While many good and relatively safe pesticides are available for use, public pressure to reduce and even eliminate pesticides from public turf areas, starting with school and parks grounds, make pesticide application a midnight effort for some turf managers. Perhaps the best ways to deal with these problems are to shift resources (funds, labor) into enhancing cultural management of the turf and forming alliances with parent and environmental advocacy groups.

Tricks of the trade. No turf can withstand continual traffic during the entire season, year after year. When space allows, use portable goals and **shift the direction of the fields** at least once each season. For example, a soccer field with a north-south orientation can be shifted to an east-west orientation between spring and autumn seasons. Recovery of goal mouth areas can be accomplished by simply moving the goal 24 feet to one side (the width of the goal). These tips are particularly helpful for practice areas which receive concentrated use during practices. When a field complex is constructed, plan to **rotate fields** periodically, so a worn field may receive time to recover. Game fields should never be used for practice, partially because of the concentration of traffic during practices. Instead, **reserve game fields for**

games! Ultimately, recognition of the field's importance and the manager's ability to provide a top-notch field will result in allocation of resources and facilitate understanding on the part of the players, coaches, parents, and spectators when a manager is able to showcase his or her abilities. One of the best ways to provide recognition for oneself is to **put a majority of one's effort into producing one extremely high quality field**, e.g., a stadium field at a sports complex. The resulting "oohs" and "ahhs" from the public will turn into "How did you do that?" questions which give the manager an opportunity to plug ideas of field rotation, better equipment, irrigation systems, funds for topdressing, etc. Another way to ensure the "oohs" and "ahhs" is to use **attractive mowing patterns** on stadium fields which can be recognized from the stands.

Lead and cooperate. At times, your organization, parents, or other groups may make unrealistic demands. Be patient! When presented with a difficult or seemingly useless request, be pleasant, listen, and offer alternatives. Your alternatives are most likely to be accepted when the listener(s) have the opportunity to help formulate the answer rather than having the alternative laid out directly for them. When groups form and want to help, accept their help graciously and work as needed to channel their efforts into a helpful direction.

Join an organization. Membership in a turf organization will provide you with peers with whom to discuss problems and unique situations. Solutions often come easier to people when problems can be discussed with other learned individuals. The Sports Turf Manager Association (STMA) is a great place to start. State organizations include the Michigan Turfgrass Foundation and the Michigan chapter of the STMA. Once you become a member, **be active**. Attend field days and conferences. Accept a leadership position in the organization. The STMA offers annual awards for "Best Field of the Year" and other honors. Winning such honors and holding leadership positions will increase your recognition and enhance your marketability. Ultimately the recognition may result in more funds for your operation, increased bargaining capacity of salary increases, and superior employment opportunities. Persons interested in learning more about the Sports Turf Managers Association may contact Steve Trusty at 1-800-323-3875 or at TrustyTips@aol.com.