Managing Sports Fields During Drought Conditions

By

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The year 2005 was one of the driest on record in Texas and while some rain has occurred this spring, predictions are for this drought to continue well into the summer months of 2006 or longer. Most cities have already put into place plans for water restrictions if the drought continues. Many cities have already initiated Phase II water restriction and are already talking about going to Phase III and eventually Phase IV if adequate rainfall does not occur within the next couple of months. Phase IV generally means no outdoor use of water. In the past, sports fields have received some sort of variance from water restrictions due to the issue of player safety. This may or may not be the case in 2006 if our current drought conditions continue.

While there may not be a lot turfgrass managers can do for their fields if water availability is severely restricted in late spring to early summer, there is still time to produce the healthiest possible turfgrass on your sports fields going into the summer months. As long as water is available, continue to water infrequent and deeply. For non-overseeded fields (dormant), apply approximately 0.5 inches of water to these fields every 30 days on native clay soils and every two weeks on sandy soils. For overseeded fields, apply approximately 0.5 to 1.0 inch of water weekly if adequate rainfall does not occur. Now is the time to make sure your irrigation system is applying water as efficiently as possible. The last thing we need to be doing is wasting water because of poor quality irrigation systems. Check for leaking/broken heads, mis-aligned heads, leaking pipe and make sure heads are rotating properly. Run an audit to insure you are applying only the required amount of water needed for healthy plant growth.

As long as adequate moisture is available, fertilize your fields at the recommended rates for healthy turfgrass growth. This means around 1 to 1.5 lbs. of actual nitrogen per 1,000 sq.ft every 5 to 6 weeks starting at spring green up. Use a slow release nitrogen source to help reduce the amount of excess topgrowth. If water availability is restricted, then consider cutting back on nitrogen fertilizer rates and if watering is eliminated, discontinue application of nitrogen fertilizer until water becomes available. There is no need to be forcing growth if water is not available to the turfgrass plants. Conduct soil tests to make sure you have adequate levels of potassium in the soil. Potassium is a key nutrient in plants handling drought conditions.

Proper mowing is a key cultural practice for producing dense, healthy stands of turfgrass on sports fields. As long as the turfgrass is growing, continue to mow your fields often enough so that you never remove more than one-third of the leaf blade. Removing excess leaf tissue when mowing will create additional stress on the turfgrass plants. As long as the turfgrass plants are not under moisture stress, mow the turfgrass at the recommended mowing height for your particular type of sports field. Once supplemental irrigation becomes limiting, then raise the mowing height to the upper end of the recommended mowing height for the type of turfgrass on

your field. For example, hybrid bermudagrasses perform best when mowed at 0.5 to 1.0 inch. During drought stess conditions, raise the mowing height to approximately 1.0 inch. Mowing the grass at 2 to 3 inches will not save water and this higher mowing height will produce a playing surface that is thin and easily worn out once play starts. Keep mower blades sharpened. Dull blades will produce a cut that remains open longer and can increase the amount of water loss from the plants.

Producing a deep, dense root system is a key in surviving extended drought periods. In compacted soils, the root systems cannot function properly due to limited availability of oxygen. Start aerifying your sports fields in the spring to increase the level of oxygen in the soils for improved root growth and development. Number and frequency of aerification will be determined by degree of compaction, type of soil and by the type of aerifier you are using. Once water becomes limited and fields become drought stricken, stop aerifying the fields. Aerification, while beneficial, is a stress on the grass and aerifying during drought conditions will only add to the moisture stress problem.

While weed control is an important tool in producing quality sports fields, applying herbicides during drought conditions could add injury to the turfgrass plants. If you have been able to water your sports fields this past winter and water is still available for use on the fields, then I would recommend applying a preemergent herbicide for control of summer annual weeds. However, if you have not been watering this past winter and water is already restricted, then I would recommend that you skip the application of preemergent herbicide this spring. While preemergent herbicides are not a problem on healthy turfgrass plants, they can reduce root growth, especially in stressed turfgrass plants. If rainfall starts occurring in the 2006 growing season and weeds become a problem, there are several good herbicides which can be use for postemergent grassy weed control in sports fields.

While managing field use is an extremely difficult job, if the drought continues and supplemental irrigation is severely reduced or eliminated, then restricting the amount of play (events) on your sports fields will become critical. Continued use, especially excess use, of sports fields during drought conditions will result in the loss of turfgrass on these fields. The amount of turfgrass loss will be determined by the amount of play as well as the length of the drought conditions. Individuals in charge of scheduling play on your sports fields need to be fully aware of this potential loss as well as understand the cost involved in reestablishing turfgrass back on the fields once the drought is over. Another issue that needs to fully considered is player safety. The majority of our sports fields at the city parks and high school level are constructed using our native soils that are high in clay content. Once these soils become dry, not only do they become very hard, but they also tend to crack open at the surface. Hard, packed surfaces increase injuries to players, especially head injuries, while cracked soils increase the potential for ankle and knee injuries to the players.

Outlined below are some key considerations on field use management during drought conditions:

1. Eliminate all practices on game fields.
2. Where possible, reduce the number of events on the fields. This is probably one of the hardest issues to deal with on field use since it will mean reducing revenue.
3. Instruct coaches to rotate heavy play areas during practice.
4. Do not allow unofficial use or play on the fields.

While using the practices outlined above may not prevent any loss of turfgrass on your sports fields in 2006 if watering is eliminated, they will help you provide the best possible chance for

keeping as much turfgrass alive as possible during our current drought situation. Good luck in 2006 and hope for some rain.