

High Performance Sports Turf

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Producing and maintaining sports fields is a year long process -- beginning with developing a plan, like coaches develop game plans. The plan should be based on sound, basic principles of turf management. Don't fall for the "quick fix" unless you have no choice. And then be sure that it is temporary and that it will get properly corrected. Like a coach develops his plan around the basic strengths of his team, a sports turf manager should focus on fertilization, mowing, irrigation, and cultivation.

Fertilization - Know your soil fertility. Highly acid or alkaline soils reduce plant nutrient use efficiency. You might put down 50 lbs. of N an acre and lose 20 lbs. because of poor soil pH. Run soil tests at least once a year until you have developed enough history on a specific field to know how it performs under your fertility program. Proper timing is important. As a general rule, this means fall and spring applications on cool-season grasses; spring, summer and fall applications on warm-season grasses.

Provide adequate fertilization to encourage turf recovery. But be careful -- too much nitrogen will also sacrifice root growth for top growth.

Mowing - Mow to maintain the turf at the desired height for the level and type of activity. It may help to vary the mowing height, keeping grass longer when stresses are high. Mow often enough so that only one-third of the grass leaf blade is removed in a mowing. Properly sharpened blades may reduce fuel use by 20% and certainly produce a more attractive surface.

Irrigation - On many occasions properly managed irrigation can ward off problems and speed recovery from problems. Generally one-inch of water per week is enough for most sports fields. But cool season grasses and arid regions may need significantly more. If possible, apply the water in a single application, rather than more frequent, shallow irrigation. With clay (heavy) soils, irrigate to the point of runoff, allow the water to thoroughly infiltrate the soil, then repeat the cycle. On extremely high clay soils, it may be necessary to irrigate on successive nights to ensure one inch of water is applied. On sandy soils, one-half inch applied twice per week is generally better.

Maximize the time between irrigation and field use. Allow 24 to 48 hours as a minimum between irrigation and play. The greater the soil's surface moisture during use, the greater the compaction.

Where no irrigation exists, make fertilizer applications before forecasted rains, understanding environmentally this is extremely risky, since a heavy rainfall will either leach nutrients through the soil or drain them off the surface into surrounding surface water. Aerify following rain, when the soil is moist enough to allow for adequate penetration.

Cultivation - Core-type aeration is the one practice that can be the most beneficial and the least disruptive, in terms of turf response. In fact, I have heard sports turf managers say they wanted an aerator before they got a reel mower because of the importance of aerification to sports fields, and I have come to agree with that reasoning.

When recovery time is adequate, core aerate and drag the cores back in to provide some topdressing. Effective cultivation is very dependent on proper soil moisture. Wet soils allow easy penetration but less material is removed, and the equipment can cause some compaction. If field use is so intense that you are concerned about surface appearance or disrupting play, use solid-tines or slicing blades.

On sites where naturally occurring high bulk density soils are deep into the soil profile, and/or compaction occurs below a four-inch depth, deep-tine aerate. Ideally, a combination of various cultivation practices will provide the best results.

Aerate prior to or during the early period of maximum root growth for the turf. Normally, late winter or

continued on page 5

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continued from page 4

early spring on cool-season grasses, and late spring or early summer on warm-season grasses, then again to relieve soil compaction after extensive use. With warm-season grasses, a final aeration after the playing season may improve root growth the following spring.

Topdressing - Topdress during the playing season, but only as needed to adjust field levels. Topdressing can temporarily reduce the turf quality of most grasses, including vigorous grasses like bermudagrass. However, topdressing is the most effective means of controlling thatch development and providing a smooth and consistent surface.

Money and people - Schedule down time to perform more intensive practices. Flexibility and some adjustment of work schedules and resources can help take advantage of play rotations and optimum weather conditions. Take care of your high-use, busy fields first. For example, fields with dense, healthy cover and lower levels of activity may not need in-season fertilization.

When multiple fields are involved, each with a heavy play schedule, it may be necessary to further narrow the allocation of resources. Concentrate on heavy use areas --

baseball infields, soccer goals, and between the hash marks on football fields, as they may need additional fertilizer and aerification.

Weed control - A good weed control program can be one of the most visible improvements made to a facility. Properly identifying the weed, then using the correct herbicide at the right time are key to minimizing weeds. Summer annual grasses are easily controlled with pre-emergence herbicides if applied correctly. Pre-emergence controls are beneficial, even when the turf is frequently aerated. Eliminating weed competition enhances recovery from heavy use, but be aware of the side effects of herbicide applications. Minimize the use of products with root pruning characteristics on thin turf areas.

The best indicator of turf needs is your own eye. When reductions of growth or thin turf are revealed during mowing, take suitable action as soon as possible. Stick to the basics and do a good job with routine maintenance.

Remember each year and season is different, and successful sports turf managers recognize these differences and adjust their game plan accordingly. *STM*



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