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Sports Field Management Practices – Preparing a Field for Winter

Properly preparing your field for winter will give your turf the best chance to be ready for play in the spring. Developing and implementing a plan to combat extreme winter weather conditions will not only help your turf survive, but will also jumpstart spring growth and result in overall healthier turf throughout the year. By beginning your winter preparation at the end of the summer and continuing it throughout the fall, you will be on your way to managing an even better field next year. Whether you are managing cool or warm season grasses, the success of your field is largely dependent on how your field overwinters. Here are some tips that will help you put your field to bed for the winter and successfully wake up in the spring.

Have a Plan

- Plan out your maintenance practices around the schedule of field use before the fall season begins. Look for extended periods of little or no play and perform your most disruptive cultural practices, such as aerification, during this time. If your field is used on a daily basis, be prepared to aerify as soon as the season is over.
- Be ready to adapt your plan if needed. Weather conditions, changes in schedules, and make-up games can alter your plan – always have a back-up plan.
- Be sure to have all equipment, seed, and fertilizers you anticipate using for winter preparation on hand before they are needed.

Cool-Season Grasses

The following are recommendations for preparing Kentucky bluegrass and/or perennial ryegrass sports fields for winter.

Fertilization

Cool season grasses get a flush of growth in the fall. It is important to fertilize these grasses

during this time to maintain healthy growth and enhance recovery from wear. With proper fertilization, your field has the best chance to go into the winter with a high amount of turf cover.

- Develop your fertilization program based on soil test results.
- Apply 1 lb. of nitrogen per 1000 ft² at the beginning of the football/soccer season (early September), at midseason (mid October), and after the first hard frost. You can wait until after the season to combine the final fertilizer application with post-season hollow-tine aerification and seeding.
- Do not apply excessive amounts of nitrogen within a few weeks before the first expected frost. Too much nitrogen at this time results in extreme plant succulence, which can lead to cold injury.

Overseeding

High wear areas on football and soccer fields lose turf cover and require overseeding during the season to reduce areas of bare soil (Figure 1).

- Begin overseeding following the first game with perennial ryegrass and continue seeding throughout the season. Over time you will build a “seed bank”

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that will help maintain cover during the fall and into the winter. Also, some of the seed that does not germinate in the fall will germinate in the spring.

- Focus your overseeding on the high wear areas, i.e. between the hashmarks on football fields and at the goal mouths on soccer fields. If you can maintain turf in these areas you will have fewer weeds in the spring.
- Fill divots throughout the season with divot mix that contains sand/soil, organic fertilizer, and perennial ryegrass seed. This will help ensure a divot-free field in spring.

Other Cultural Practices

If you have a baseball field that is only used in the spring and summer, fall is the perfect time to improve soil conditions heading into the winter. On fall-used fields, you can wait until after the season to perform cultivation practices.

- Aerify, spike, or slice during the fall to relieve compaction, increase infiltration, and increase oxygen flow into the rootzone. Core aerification causes significant surface disruption so it is often best to wait until after the football/soccer season.
- If you core aerify a native soil field, drag dry cores back into the field. On sand-based fields, remove the cores and topdress with a sand that properly matches the particle sizes of the rootzone.
- Solid-tine aerification, spiking, and slicing each produce less surface disruption than core aerification and are often better in-season cultivation options (Figure 2).
- Combine overseeding with aerification, spiking, slicing, or any other similar cultural practice.

After the Season

Depending on your location, your turf may be able to begin to recover from damage after the season if it is still actively growing. If turf growth has stopped, you can still take steps to ensure your field survives the winter.

- Lower your mowing height to reduce your chances for snow mold outbreaks and damage.
- Even if your turf is dormant, aerify with hollow-tines and seed so you do not have to worry about it in the spring when your field may be waterlogged from spring rains.
- Applying topdressing in conjunction with aerification will also improve conditions in the spring. On native

soil fields, consider topdressing with compost.

Information on using compost on turfgrass can be found at <http://turfgrassmanagement.psu.edu/proturf.cfm>. Sand-based field should be topdressed with sand that closely matches the particle size distribution of the rootzone.

- Seed large, worn out areas like the center of your football field.
- Sod smaller worn out areas. Even if the sod is dormant, you can install it in places like soccer goal mouths (Figure 3). As soon as the weather warms up, it will start rooting.
- Apply a fungicide to protect against pink and gray snow mold. Check with your local university for recommendations on which fungicides to use.
- Use growth covers. Growth covers create a greenhouse-like effect that allows seed to germinate and turf to grow during the winter (Figure 4). Consider using growth covers in your high wear areas after you have seeded them. Be sure to apply a snow mold fungicide and remember you'll probably have to take the covers off periodically so you can mow.
- Preemergent herbicides can be applied in late fall for spring weeds BUT it is important to not overseed if you apply a preemergent herbicide because the herbicide will prevent your seed from germinating. If you need to overseed, you can kill weeds in the spring with postemergent herbicides.

Baseball and Softball Fields

Many of the tips described above can also be used on baseball and softball fields. Here are some additional tips:

- Core aerify in the fall. If your field is not getting used in the fall, the surface disruption will not matter.
- Prepare the pitcher's mound and home plate area prior to winter, then cover each with a tarp so they are ready to go in the spring.
- Use silt fence or 2 x 4 boards around the edge of your infield skin to prevent wind-blown infield dirt from forming a lip between the skinned area and the turf.

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Bermudagrass

Bermudagrass is grown on many sports fields in the south where winters are less harsh. The following are recommendations for bermudagrass fields.

Fertilization

Bermudagrass begins to go dormant when day lengths get shorter and air temperatures drop below 50 F.

You should apply the majority of your fertilizer in the summer when the bermudagrass is actively growing.

- Develop your fertilization program based on soil test results. It is especially important to have optimum levels of potassium prior to winter dormancy.
- Reduce, but do not eliminate nitrogen applications in the fall. Excessive amounts of nitrogen can lead to leaching because plant growth and nitrogen uptake is slowed in the cooler fall weather.
- On areas prone to spring dead spot, reduce nitrogen rates in the fall.
- Make final nitrogen application 30 days prior to the first expected frost. Applications after this time may increase your chances for winterkill.
- Consider foliar-applied iron to help maintain green color without a flush of growth late in the season.

Overseeding

Because bermudagrass goes dormant after frost, cool season grasses are often overseeded on bermudagrass fields to provide green color during the late fall and winter months.

- Select your overseeding grass – either annual, perennial, or intermediate ryegrass.
- Begin overseeding in early to mid fall to be sure the overseeded grass germinates and begins to grow before the bermudagrass goes dormant.
- Verticutting and/or slit seeding is often not required for overseeding. Try not to damage the bermudagrass – even though it is going dormant, it still provides a good playing surface. Plus, you will reduce your chances for winterkill.
- Consider painting the field with green paint instead of overseeding. This saves you a lot of money and labor time plus you do not need to worry about killing the overseeded grass in the spring.

Remember, your bermudagrass needs at least 100 days of competition-free growth to establish a strong stand so the overseeded ryegrass must be removed with a herbicide application the following spring.

Other Cultural Practices

All aerification, verticutting, topdressing, etc. on bermudagrass should be done in the summer when the bermudagrass is actively growing. If you wait until fall, you are setting yourself up for a high chance of widespread winterkill.

- If spring dead spot is a problem, apply a fungicide in the fall when soil temperatures are still above 60 F. Check with your local university for fungicide recommendations.
- Cover the field with a tarp on nights that frost is expected. This will help maintain green color and minimize initial frost injury (Figure 5).

After the season

Odds are that by the end of the season your bermudagrass will be nearly or completely dormant. At this time, there are still a few things you can do to help get ready for spring.

- If you overseeded and your field is not going to be used in the spring, use a non-selective herbicide such as glyphosate to remove the overseeded grass. BE SURE the bermudagrass is completely dormant before applying.
- For non-overseeded fields, glyphosate can be used to control winter weeds (Figure 6). Again, BE SURE the bermudagrass is completely dormant before applying.
- Consider using a growth blanket or tarp to minimize winterkill.
- To protect bermudagrass from cold temperatures, 4 to 6 inches of clean straw can be spread over the field to insulate the turf. This requires about 300 to 400 bales of straw per field. Use netting to be sure the straw does not blow away and make sure the bermudagrass is dormant.

Baseball and Softball Fields

Many of the tips described above can also be used on baseball and softball fields. Also, refer to the baseball and softball fields section under cool season grasses for additional tips for your infield.

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Figure 1. Constantly seeding high wear areas like this during the season will not only help during the season, but it also gives you a jumpstart in the spring



Figure 4. Using growth covers on the middle of the field can help your turf recover from football damage after the season.



Figure 2. Using solid tines like these to aerify can help increase water infiltration and oxygen levels in the rootzone with little surface disruption



Figure 5. Early frost damage like this can be prevented by covering the field with a tarp prior to expected frost.



Figure 3. Sodding goal mouth areas at the end of the season is often a better option than waiting for seed to germinate in the spring. The sod will begin rooting as soon as the weather turns warm.



Figure 6. Non-selective herbicides like glyphosate can be used to control winter weeds in bermudagrass as long as the bermudagrass is completely dormant at the time of application.