



Turfgrass Identification

Dr. Eric Lyons, Assistant Professor, Turfgrass Science, University of Guelph

If you were to ask most end users of athletic fields what kind of turfgrass is present on a field, they will likely say that there is one type of grass with the remainder of the vegetation being weeds. Turfgrass professionals, however, know this is not the case. There are many turfgrass species with each having an ideal growing condition and optimal use. With this in mind, you may be able to guess the significance of being able to identify the different species of turfgrasses that are found on athletic fields and parks.

Almost every introductory turfgrass management course emphasizes the importance of proper turfgrass identification. Although emphasized, too often the reasons “why” are not explicitly stated. Generally, most sports field managers have little opportunity to see the fields that they manage on a regular basis. Municipal parks managers are often in charge of many fields frequently spread across large geographical areas. The ability to identify turfgrass species will help the sports field manager better understand what has occurred at a field between visits, as they observe a change in species.

Three primary reasons to be able to properly identify turfgrasses on an ath-

letic field are: 1) to assess the success of an overseeding program, 2) to aid in the identification of potential problems, and 3) to determine interactions between turfgrass species and alternative management practices. The purpose of this article is to discuss these reasons in detail and explain how the ability to identify the turfgrass species present on an athletic field will provide sports turf managers with an invaluable tool to better manage their fields.

Overseeding

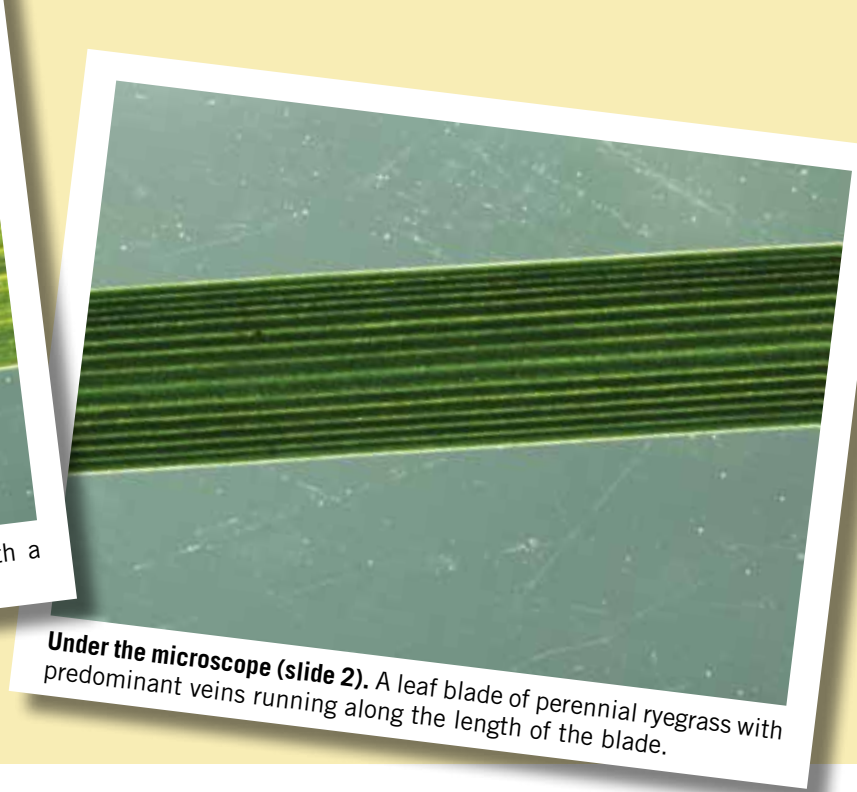
One important management practice currently employed by athletic field managers is overseeding. With municipal pesticide bans, it has become apparent that fields that have been part of a consistent over-

seeding program fared much better than fields that were not. However, the expense of both seed and labour hours involved in overseeding athletic fields has resulted in a need to measure the success of overseeding programs.

As most overseeding programs are implemented through the use of perennial ryegrass, one of the ways to determine the success of these programs is to assess the percentage of ryegrass and Kentucky bluegrass in the turf stand. This makes the identification of perennial ryegrass as opposed to Kentucky bluegrass very important, a task that is not so simple as these are two of the hardest grasses to tell apart. Many students in turfgrass programs will pull the sample apart looking for the



Under the microscope. A leaf blade of Kentucky bluegrass with a relatively flat surface with a visible midrib.



Under the microscope (slide 2). A leaf blade of perennial ryegrass with predominant veins running along the length of the blade.

rhizomes that make Kentucky bluegrass so wear tolerant.

While that works in a classroom, it may cause considerable damage to an athletic field. Thankfully, there are other ways to differentiate the two species. All bluegrasses have a boat-shaped tip, although with mowed turfgrasses this is not always easy to identify. In addition, the leaf blade of Kentucky bluegrass is relatively flat with two prominent lines. Perennial ryegrass has similar lines, but they are less prominent when compared to the parallel lines across the entire leaf blade. Two of the biggest tell tale signs of perennial ryegrass are the shiny underside of the leaf surface and a reddening at the base of the plant. These are often the quickest ways to pick out perennial ryegrass in a Kentucky bluegrass stand although they are not always completely reliable.

Identifying or Avoiding Problems Using Turfgrass ID

The turfgrass species that are used on athletic fields have varying tolerances to cold and winter injury. Both a knowledge of the species that are present on the field and an understanding of the relative susceptibility of each species to winter injury will help a turfgrass manager to predict winter damage.

The previous section discussed overseeding with perennial ryegrass and the importance of differentiating between

ryegrass and Kentucky bluegrass to assess whether or not an overseeding program is successful. Knowing the amount of perennial ryegrass in a field can also help a manager predict winter damage. Perennial ryegrass is more susceptible to winter injury and damage from ice coverage. Knowing which fields are at greater risk for winter injury allows a manager to schedule early season events around possible repairs.

In recent years, some fields have been planted to turf-type tall fescue. This rhizomatous tall fescue has shown promise as a grass that continues to grow without

All bluegrass species have a boat-shaped tip and a relatively flat leaf blade with two prominent lines. Perennial ryegrass has similar lines, but they are less prominent. More telling are the shiny underside of the leaf surface and a reddening at the base of the plant.

supplemental irrigation in the heat of the summer. One of its drawbacks in Canada, however, is that it is very slow to “wake up” in the spring. If a turfgrass manager knows that a field is predominately tall fescue, then she or he can attempt to limit traffic on the field in the early spring and increase field use in the heat of the summer.

One of the best indicators of a drainage problem or a field that has been constructed in an area with a high water table is the presence of stoloniferous turfgrasses, those with above-ground

lateral shoots. Usually considered weeds on athletic fields, creeping bentgrass and rough bluegrass are both stoloniferous turfgrasses and indicators of saturated soils. When deciding to allow play after a significant rainfall, or even when determining the mowing schedule when fields may be wet, the presence of these grasses will tell a turfgrass manager which fields are most likely to remain saturated the longest and therefore be most susceptible to compaction and wear injury.

Finally, turfgrass species can be a good indicator of how much wear a field is experiencing and a predictor of how much

wear a field will be able to withstand. In an effort to reduce management costs, some municipalities have begun establishing athletic fields with low-input turfgrasses, or they have just created fields on areas that were originally planted with low-input turfgrasses. Turfgrass species such as fine fescues and bentgrass may be good low input grasses, but they do not have the growth rates to recover from the wear athletic fields must endure. The ability to identify turfgrass species allows the turfgrass manager to better select sites for

new fields, and anticipate field failures as well as the need for renovation in advance of the event.

Turfgrass ID & Interaction With New Pest Management Products

With the ban on traditional pest management products, a number of new alternatives are appearing on the market. Many of these products have been fast tracked through registration and are only tested on common turfgrass species such as Kentucky bluegrass and perennial ryegrass. In general, relying on data from these two grasses is not a problem with our traditional pest control products as they often target hormonal pathways that are specific to the pest or weed being eliminated. Newer products are less specific and we may see significant damage to commonly found species such as annual bluegrass on athletic fields.



Annual bluegrass is a weedy turfgrass that is a prolific seed producer. Its high seed production and resistance to mowing make it a great candidate for invasion into highly disturbed environments like athletic fields. Annual bluegrass is not very wear tolerant but it is constantly overseeding itself so it can become pervasive. One issue with annual bluegrass on athletic fields

is that it is very susceptible to damage by line paint.

Often, with as few as two applications of coloured turf paint, significant injury to annual bluegrass can occur. This example illustrates that not all turfgrasses respond to all products in the same way. Just because a product works well on a Kentucky bluegrass field does not mean it will be safe for a field that has been taken

athletic field manager. It has not taught you how to identify turfgrasses. In actuality there is only one way to get good at turfgrass identification: practice repeatedly. In addition, you need to ask questions and access resources available to you. There are many good turfgrass identification keys available on the internet or in print format. Utilize them and try to improve your skills at differentiating



Both Photos. Patches of creeping bentgrass in a Kentucky bluegrass field on a high water table.

over by annual bluegrass. If you know a field is a different species, you can test a product in a small area out of play to assure that it will not damage your predominant turfgrass species on the field. In order for the test application to be effective, you have to make sure the area that is being tested actually represents the species that are on the field.

Learning Turfgrass ID

This article has focused on the importance of turfgrass ID as a tool for the

among turfgrass species. Once you can tell them apart, you can confirm that you are identifying them correctly by asking colleagues and double checking using multiple resources.

The pressures on our professionals to provide safe athletic fields on limited budgets without traditional pest control products makes it more important than ever to use all of the tools that we can to provide better athletic fields for our communities. Turfgrass ID is one of those tools that can help you achieve that goal.

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A good quality playing surface vs. less than desirable conditions (below).

Sports Field Management for Schools

David Ormsby, Agronomist, NZ Sports Turf Institute, Hamilton, New Zealand

Schools face the considerable challenge of trying to provide for the different training requirements of their students. Inevitably, sports fields, despite being a major educational facility, are at the bottom of the “food chain” when it comes to receiving funding. Consequently, sports fields at many schools fail to meet expectations at some time during the year. Furthermore, the same host of problems often reoccur from one year to the next.



Although economic reasons are often cited for substandard performance of school playing fields, there are other considerations including: poorly defined or unrealistic expectations; lack of an

appropriate asset management plan to support expectations; lack of appropriate maintenance plans; a reactive maintenance approach is often adopted (aside from mowing and weed control); and inappropriate prioritization of resources.

Moving Forward

Clearly, an important benefit of improved and/or quality field conditions is that it assists students to develop better playing skills and add to their enjoyment of the sport. If schools are to fulfil their expectations and provide acceptable playing conditions, both a strategic and operational approach is required when managing sports fields.

Strategic Considerations

1. Clearly defined expectations for each field. This provides a basis for identifying capital and maintenance requirements thus allowing for the establishment of appropriate budgets. Equally, it enables schools to quickly determine the appropriateness (or otherwise) of a given expectation.

- Is closure due to wet weather acceptable?
- What is the maximum number of closure day(s) that is acceptable?
- How much use must we accommodate?
- What level of play are we accommodating – senior representative play vs. junior or casual use?



College Rifles artificial surface.

The Ontario Perspective

PAM CHARBONNEAU, TURFGRASS SPECIALIST, OMAFRA

For schools in Ontario, weed control options are limited to cultural controls and bioherbicide ingredients listed in Class 11 by the Ontario Ministry of the Environment (www.ene.gov.on.ca/en/land/pesticides/class-pesticides.php). There are also some mechanical control options such as propane flaming and steaming that are available for non-selective weed control in turf. Overseeding, either by broadcast seeding or slit seeding, helps ensure a quality playing field and also helps reduce weed populations.

2. Developing an appropriate asset management plan. This will involve:

- A feasibility study to confirm the limiting factors and options available for moving forward.
- Identifying the most appropriate grass for the situation, along with the maintenance requirements and costs of the various grassing options.
- Identifying the ongoing maintenance costs for the chosen level of playing quality or standard of sports field. This is a major consideration, given that for many schools obtaining funding for capital works is often easier than finding ongoing funding necessary for the upkeep of the upgraded fields. Regrettably, it is not uncommon to see fields failing despite considerable capital improvements due to the lack of or inappropriate maintenance.

- Identifying the capital improvement options that best meet your expectations and the ramifications of each. For example, potential options for improving the availability of the fields for play include:
 - Additional, appropriate maintenance like verti-draining, nitrogen fertilization
 - Improving levels to prevent ponding
 - Subsurface drainage
 - Sand technology
 - Artificial surfaces

Each of these options provide differing levels of service and financial impact for the school.

Operational Requirements

1. Maintenance. Once the school has completed the strategic process detailed above, it is essential that an appropriately

resourced and ongoing maintenance plan is adopted. Implementing a basic, regular annual maintenance program is more cost-effective than letting fields get run down and spending several thousand dollars to resurface them. A regular rather than reactive approach to maintenance provides:

- Better consistency and predictability of sports field playing quality.
- Maintenance costs are more predictable and easier to budget for.
- Less risk of unexpected or additional costs, e.g. increased janitorial costs for cleaning classrooms thanks to muddy feet/bodies.

2. When determining what is an appropriate level of maintenance:

- Be realistic. The greater your expectations, or the more a field is used, the greater the maintenance requirements.

- Establish priorities for maintenance activities based on the amount of use a field receives and/or the importance of each field. Generally, high use fields require greater inputs than lower use fields.

Too often, field maintenance is made unnecessarily complicated or expensive. The key is to prioritize resources and place your emphasis on those options that will provide the best return on your maintenance dollar. Research and field observations have shown that the most common limiting factor on fields is poor turf cover. Once grass cover is lost, field condition deteriorates rapidly.

3. For many schools, the maintenance priority list would typically consist of:

Mowing. Use appropriate equipment that will not damage the field (e.g. marks from agricultural tires). Mowing frequency and height are the most important requirements.

Usage control. Where modern sand or synthetic surfaces are not an option, closure of the field(s) when they are excessively wet or soft will provide major benefits for the school – both in better playing quality for



Damage caused from overuse during training.

the remainder of the year and significant savings due to reduced requirements for renovation.

Nitrogen fertilization. For most situations, strategic applications (late spring, late summer and late fall) should be the first priority and will provide a stronger plant throughout the summer when retaining grass cover is paramount.

Weed control. For schools, weed control is critical to avoid both the health (bee stings)

and nuisance problems that they create.

Other. Physical treatments and undersowing.

First and foremost, the provision of safe, consistent and quality sports fields requires expectations to be clearly defined. Thereafter, an appropriate asset management and preventative-based maintenance plan needs to be implemented.

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Industry News

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Industry News

CONTINUED...

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"Comprehensive cultivation and topdressing programs are increasingly important for our customers around the world," said Michael Happe, vice president of Toro's commercial business. "Golf courses and sports fields rely on these machines to achieve improved agronomic conditions and to create healthy, consistent playing surfaces. TY-CROP's solid reputation in this important category complements our existing line of application and cultivation equipment. Equally, it provides our customers with a more comprehensive offering to meet their turf maintenance needs."

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PARKS & OPEN SPACE ALLIANCE UPDATE

This year presents all of us in the parks and recreation field with many challenges. Shrinking budgets, tighter controls on spending and greater scrutiny of courses and conferences are pressures facing members throughout the province. The Parks and Open Space Alliance (POSA) continues to work on behalf of all parks professionals to create new opportunities for professional development and career growth by targeting those areas and skills that are keys to success in our industry.

POSA and its partner organizations, the Ontario Parks Association, the Ontario Recreation Facilities Association and the Sports Turf Association, are actively reviewing our courses and ensuring that they deliver premium value for cost and address the pressures and opportunities in our field. We are always working to develop new valuable and innovative programs to be delivered under the POSA banner to complement and enhance the courses offered by our core organizations.

You are invited to attend our Summer Operational Forum on Wednesday, June 23, 2010 at the Cambridge Hespeler Arena. This year's theme is Accessibility in Ontario's Parks. Join us to hear a variety of interesting and dynamic presentations that will help us to understand the needs and requirements of these members of our community and how we can help to enhance their parks experience and open doors to new opportunities.

June 23 Program Overview

- Accessibility for Ontarians with Disabilities Act (AODA): Standards, Legislation and Municipal Response
- Active Living Alliance Tool Kit
- Accessible Playgrounds
- Variety Village: Promoting Access and Inclusive Participation
- Open Forum/Discussion: Topical Trends and Issues for Parks and Open Spaces

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