weather conditions, such as humidity, that may weaken turf and/or favor a certain pest. Turf injuries from severe weather such as hail, lightning or early or late frosts are often misdiagnosed as pest damage.

3. The soil situation should be frequently checked to ensure that the pH, nutrient content and soil structure are adequate to maintain healthy turf. This situation is often overlooked because soil problems may not be that apparent.

4. Keep records of the day-to-day maintenance that the turf receives and make sure that proper management practices are employed. Inform personnel to report any unscheduled changes in the management regime, such as the accidental misuse of pesticides.

5. Brush up on the major turf *pests* in the area and become familiar with the symptomology, identification and Steps in Diagnosis

There are many ways to approach a field problem; however, a logical sequence of events must be followed. The following is presented only as a guideline and should be modified to suit the particular situation being addressed.

Turf Inspection. Frequent, even daily, turf inspection by the manager is the first step to correct diagnosis. Early pest detection can minimize pest damage and result in savings of time, effort and money. Many pest symptoms are easiest to identify when the pest invasion is in its initial stages. This is especially true for disease incidence.

Signs and Symptoms. Familiarization of problem signs and symp-

biology of each pest. Doing so may prevent extensive turf damage from these pests.



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the following relevant information: Specify type of grass (Kentucky) bluegrass, ryegrass, etc.).

· How old is the turf stand? Seeded or sodded?

· Describe the situation (sports field, park, etc.).

· What is the damaged area (i.e., 20% of the turf stand, under trees only, in low-lying areas, near sidewalks, etc.)?

· Describe the size, shape and color of the affected area.

· When was the problem first noticed?

· Has the same problem occurred in the same area in previous years?

How is the turfgrass cared for?

· Describe environmental conditions (rainfall, etc.).

· Describe soil type (subsoil, clay, sand, etc.).

· Are there signs of insect or animal activity (large number of birds; moths flying across lawn, etc.)?

5. Ship early in the week. Do not send a sample on Thursday or Friday. It could dry out in the post

Jeff Lefton, Clark Throssell and Zachary Reicher are turfgrass specialists at Purdue University. The above appears in "Turf Science Program" — http://www.agry.purdue.edu/agronomy/turf/turf.htm a Web site sponsored by Purdue University's Department Agronomy.

Sending Turfgrass Disease Samples

By Jeff Lefton, Clark Throssell and Zachary Reicher

Periodically, various insect, weed, brown spot and other problem-area samples become a challenge to diagnose. Your first step is to develop a working relationship with your local county Extension agent, who has access to various technical publications and knowledge that can help you in your analytical process. The next possible step is to submit a sample directly to a technical specialist. For suspected occurrences of turf disease, a method for submitting samples is given below:

1. Send at least a 6-inch square section with at least 1 inch of soil attached. Collect the sample from the transition area of the healthy and affected turf; this should include portions of the diseased and healthy turf.

Wrap the sample in a slightly dampened newspaper. Enclose this in additional newspaper or a perforated plastic bag. Do not add excess moisture, as this will encourage rotting.

3. Enclose the sample in a strong box. Include as much information as possible on the nature of the problem (see list below). Photographs of the affected area are often helpful.

Besides your name, address and phone number, try to provide toms cannot be overemphasized. Symptoms refer to plant reactions to pests (e.g. lesions, wilting or stunting) on individual turfgrass plants and on stands of turfgrass. Signs refer to the actual presence of the pest (e.g. fruiting bodies and mycelium).

Turf diseases result from the combination of a susceptible host, virulent pathogen, and environmental conditions favorable for disease development. Any practice that reduces grass susceptibility, controls disease organisms or alters the environment to disfavor disease development can help reduce infection.

Suspected disease activity is best confirmed by laboratory methods, although familiarization with the signs and symptoms will help identify the pathogen. Become familiar with the common diseases that are most likely to occur in your area and on the turfgrass species you maintain.

Symptoms that may suggest a presence of disease include the following: (1) irregular or round patches of dead grass; (2) powdery appearance on sur-

face of grass blades; (3) thin stands of turf: (4) mushrooms or puffballs; and (5) rings or arcs in the turf.

Symptoms of non-pest, man-made or environmental problems are too diverse to be discussed at any length. Adverse soil conditions, improper cultural practices, adverse weather and chemical injury are just a few of the possible causes. The ability to diagnose such problems correctly can only come from experience. The turf manager should keep in mind, however, that such problems are non-infectious and thus cannot be spread from plant to plant. Pesticides are not effective in controlling such problems.

Non-infectious problems can be easily confused with pathogen induced problems. Accurately distinguishing between the two is important. If you are confused or uncertain as to what is the exact cause of the problem at hand, then by all means obtain assistance from the sources mentioned earlier. One or more turf specialists, plant pathologists or entomologists may be required to determine the exact cause

of the problem.

Determine Prognosis. Once the cause has been determined, it is necessary for the turf manager to decide if control measures are justified based on economics and the severity of the problem.

Choose the safest and most effective control measure or measures available. Such measures include the use of adapted grasses, changes in the management regime and the use of chemicals.

If chemical control is necessary, select the proper pesticide and read and follow label directions. Become familiar with the proper use of the pesticide, and time your applications when the pesticide will be most effective.

Finally, take the necessary steps to ensure that the problem will not reoccur.

Art Bruneau, North Carolina State University, and David Bishop are IPM turf specialists. The above information appears in"PENpages" http://www.penpages.psu.edu/ — a Web site sponsored by Penn State University's Department of Agronomy.

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Warning and regulatory signs are a good way to "cover all your bases." Photos courtesy: Floyd Perry.

Avoiding Liability Lawsuits

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By Floyd Perry

Avoiding liability lawsuits is probably not part of your written job description, but it's definitely part of your dayto-day duties. Whether you're the facility manager, sports turf manager, crew chief or crew member, your action - or lack of action - could put you and your facility at risk of time-consuming, costly litigation.

In liability cases, lawyers focus on the three big issues: "prudent," "reasonable" and "consistent."

More clearly defined, prudent means wise in handling practical matters; exercising good judgment or common sense. Would you and most people consider your actions the practical, logical thing to do under the circumstances?

Reasonable means in accordance with sound thinking; within the bounds of common sense. Would any similarly employed person, or group of people, given the same set of circumstances, choose to act in that same manner?

Consistent means uniform, reliable, steady. Are conditions the same as usual and to be expected given the past level of maintenance and the past performance level of the facility or field during similar circumstances?

Any facility, on any budget, should be able to comply with the intent of these three issues. The key is:

- applying the best techniques given the facility's budget and equipment,
- · doing it regularly and on schedule,
- · documenting that you are doing so.

Basic Management Guidelines

assess your situation. Develop a clear picture of the practical problems that face facilities such as yours. Gain an understanding of common law pertaining to your job and responsibilities and to the jobs and responsibilities of those whose work you supervise.

Concentrate on developing quality solutions to common problems, start-

continued on page 46



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Prudence can be demonstrated at a facility by identifying the difference between two like surfaces; here, yellow paint alerts people to two levels of concrete.

multiple public use fields, is it prudent and reasonable to allocate major resources to the high-profile field used only by one team and visiting players and minimal resources to public fields used by 8,000 taxpaying people? If public fields are used daily, is it consistent to perform field preparation procedures once a week?

Documentation is a vital part of the process.

Develop maintenance checklists both to instruct and remind crew members of the steps that must be taken and to provide a record of procedures for legal review if necessary. Monitor the checklists regularly to ensure proper procedures are being performed and documented.

Keep written or computerized records of all maintenance procedures, including such key data as aerification and irrigation sched-

Liability

continued from page 44

ing with the "big picture" of departmental philosophies and working through the practicalities of staffing and budgets.

Set up plans before the facilities are built, if possible.

Establish standards that are within the policies of the community, the facility and your supervisors, but be sure to "cover all your bases."

Once procedures are in place and work is under way, continue to educate your staff and yourself about new and innovative techniques.

Positive Maintenance Systems

Establish overall maintenance systems for field care that cover the basic criteria - playability, durability, safety, appearance and economy - and that address the concerns and responsibilities of common law.

Evaluate all aspects of your facility to decide where priorities should be placed and how to make field maintenance more equitable. Remember the three big issues: prudent, reasonable and consistent. If your department is in charge of a Minor League field and



Evaluate all aspects of your facility to decide where priorities should be placed. In some parks, for instance, it might be reasonable and prudent to fully enclose a "tot lot."

ules and what products were applied in what quantities to which fields on what dates. Include weather conditions in your daily reports.

Track equipment use and record equipment maintenance. Note the use of rented or borrowed equipment and any costs involved.

Establish practical field-use guidelines, based upon your conditions and resources, that allow you to protect the integrity of the field. Develop methods to control the schedule to avoid overuse or use in unacceptable conditions.

If field maintenance and use procedures consistently cause conflicts between the sports field manager and the scheduling coordinator or user groups, request a quality control audit by a qualified third party. If the results of this audit don't help you convince the powers-that-be to implement necessary changes, keep copies of the audit and your written requests to comply with it in your files. This should help shield you personally from liability lawsuits and community criticism. If the conflict becomes a serious professional concern, changing jobs may not be out of the question

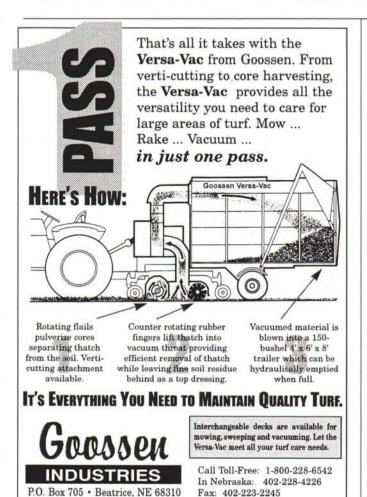
Photo Documentation

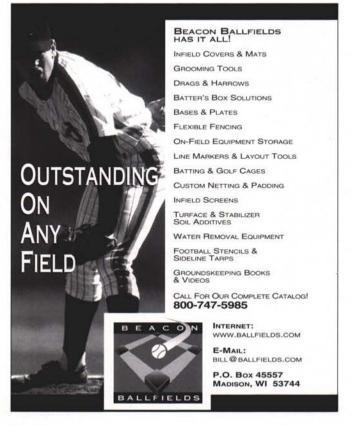
Back-up your computer and written documentation with a photo record. Photos help you to evaluate management and maintenance practices and to document problems and potential problems. Photos provide a visual record of conditions, good or bad, at any given time. Photos taken at regular intervals, such as weekly or bi-monthly, help you compare current field conditions to those of previous periods.

Photos can augment your explanation to superiors about a problem and help establish the need for supplies or equipment to solve it. Pre- and postgame photos can assist you in showing field users the damage caused by play in wet conditions and why cancellations are necessary. Photos taken before and after a specific maintenance practice can both show the

Does Your **Department Have?**

- · A safety committee to review policies, procedures and accidents?
- · Weekly, bi-monthly, monthly checklist procedure?
- · Annual training sessions for employees?
- · Equipment maintenance repair sheets and hand equipment inventory forms?
- · Employee certification in basic First Aid, CPR and Heimlich Maneuver techniques?
- · Minimal First Aid kits, fire extinguishers, and a phone or a twoway radio in trucks and maintenance shops?
- A posted calendar with the notice x (number of days) without an accident as a daily reminder?
- · A means of recognizing staffers who contribute quality safety suggestions?





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results of the action and document that the practice took place.

Defense Mechanisms

Anyone can be sued at any time, by anyone, over anything, but winning a suit is a different scenario. Strong pro-active defense mechanisms created and diligently followed can protect you and your organization against petty and frivolous lawsuits.

Create an annual physical exam policy for staff health that screens both for health risks and for alcoholor drug-related problems. This also demonstrates that your department is professional and is interested in the well-being of its personnel.

Instruct your staff always to use good common sense. Err on the side of safety. For grounds managers and grounds personnel, this includes practical measures for their own health and safety, such as using proper protective clothing and equipment, following safety guidelines and not working on difficult tasks or tackling any heavy unloading alone.

An Accident Action Plan

Develop a step-by-step action plan to follow in case of a serious or catastrophic accident. The plan must consider the needs of participants, spectators and facility personnel.

Instruct your staff on how to implement this plan. Keep copies of the plan easily accessible in a checklist format, so it can be followed even during a crisis.

In dugouts and locker rooms, post copies of an emergency action plan that concerns players, and be sure visiting coaches are aware of them.

Provide the proper tools to implement the accident action plan and to ensure all on-site steps involving the injured person or persons follow the procedures. best medical includes training (and hopefully certification) in First Aid and CPR, and such other lifesaving tactics as the Heimlich Maneuver. Supply a cellular phone or quick and ready access to another phone on-site, specify that the call to 911 be made immediately, and designate which person should make the call.

Designate the proper alignment of

staff members or volunteers to aid and direct a rescue vehicle immediately to the site of the injured victim. Ensure that your emergency entrance will be unlocked and void of pathway obstructions to provide clear access to the victim.

Develop a spectator witness form as part of your emergency kit. Have accident witnesses use the form onsite to report their observations so there's an unbiased record of what occurred. This key point is one of the more important defense steps that your facility has.

Also in the emergency kit, keep a Polaroid camera and a throw-away camera filled with film. Take pictures of the accident scene. Whether the photos are favorable or unfavorable, this can be prudent and valuable in proving your case.

Plan beyond on-site care. To speed emergency room access, make sure all medical and insurance forms are upto-date and carried with the ambulance. For an underage victim, the parents or legal guardians must be contacted and instructed of the action taken for their child.

> Stay involved after the accident. Make every attempt to visit and console injured person. This is the time when a good bedside manner plays an important part in the victim and family's feelings concerning the accident and/or long-term problems.

Review your procedures after an accident. Determine worked what planned and what was inefficient or ineffective. Correct any weaknesses.

No Guarantees

Having a First Aid certificate, a cellular phone on site, an emergency procedure in place and followup actions documented doesn't necessarily mean you're out of the lawsuit woods. But you can show to the court and the



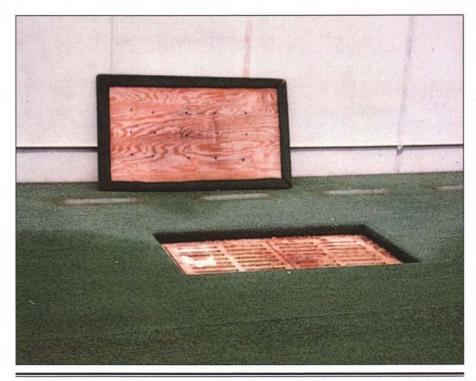
Whether good or bad, the conditions of a facility should be photographed.

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injured individual that serious problems have been discussed and thought out, and that your policies and procedures were in place.

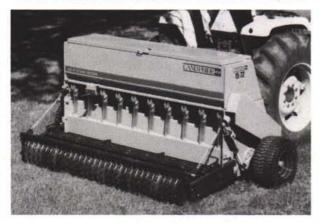
You, your department or school may still get sued and even lose when you have done everything correctly. But there is some consolation. The most important feature of your precautions is that you might have saved a life or saved a life-threatening situation because you were ahead of the liability wave. So, although you lost in court, you won on the field.

As owner of Grounds Maintenance Services, Orlando, Fla., Floyd Perry provides consulting services and gives safety and field care seminars. He's the author of a set of books titled Pictorial Guide to Quality Groundskeeping and two videos, The ABCs of Grounds Maintenance for baseball and for softball, and is a member of the STMA Certification Committee. He was named the 1996 sportsTURF Manager of the Year for his contributions to the industry.



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STMA in ACTION

Frontier Pioneers Conversion

What started as a dream ended in successful reality for Frontier Field. the new multi-purpose stadium in downtown Rochester, N.Y., where the very first conversion from a baseball field to a professional soccer pitch occurred early this summer.

The Rochester Rhinos, one of the top-rated teams in A-League professional soccer, share Frontier Field with the Rochester Red Wings, the AAA affiliate of the Baltimore Orioles.

With guidance from STMA member Alan Dungey, Frontier Field's facility manager, and Gene Buonomo, Red Wings groundskeeper, the baseball infield and base paths were sodded with fresh grass for the Rhinos' first home game, on Memorial Day, May 26. A crowd of 12,153 watched the historic soccer game, which was played on a complete natural grass field where only 24 hours earlier the baseball team had finished a three-game home stand.

While the Rhinos lost only their second game in six starts that day, the turf held true throughout the game. "The turf was fine," the Rhinos goalkeeper said. "The grounds crew should be commended on the great job they did."

The conversion began the evening before the soccer match when a crew from RM Landscaping began to edge the infield and lay sod at 6 p.m., after the Red Wings Sunday baseball game.

Fresh grass, acquired from Batavia Turf Farms in 30-inch by 90-foot rolls, was laid out on fabric covering the infield dirt. Six hours later, the crew completed the job of laving approximately 1.550 square vards of grass.

The following morning, they placed additional grass on the warning track to finish the 110-by-70-foot soccer playing surface. The new sod was watered and then rolled, which leveled the field. Turf lines were marked and the field was ready for the 6 p.m. match. In less than 24 hours, the conversion was complete.

Stadium Director Jim LeBeau. who was involved in the design, construction and now the operation of the state-of-the-art facility, says, "Frontier Field is now truly the multi-use stadium that we had envisioned. The conversion is certainly one of a kind for facilities this size, and I'm proud that all parties are working together to make this happen."

Along with a busy schedule of soccer matches and baseball games, Frontier Field also entertains concerts and other events. The turf conversion will be applied before every Rhino match, and the soccer organization will pay the approximate \$5,000 cost of the turf and landscaping each time.

"For professional soccer, the turf conversion is an important step to developing the game in the United States," says Francisco Marcos, commissioner of A-League soccer.

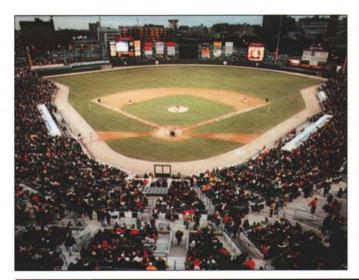
"We feel it is important for our fans to enjoy the game on an all-grass field," says Rhinos Vice President/General Manager Chris Economides. "All parties, including Frontier Field and the Red Wings, have been enthusiastic about this concept, and we look forward to being leaders in this type of stadium field conversion."

After each soccer match, the turf is rolled back and either sold or donated to private parties and charities. The life span of the rolled grass is only 24 hours after being pulled from the field, so it is immediately carted from the stadium. The pitcher's mound, which is leveled and removed from the field, is rebuilt for the following baseball game. The conversion from baseball to soccer will occur 11 times this summer.

Outstanding Job

The mission of STMA is "to be the leader in the sports turf industry, to enhance, promote and improve professionalism through excellence in communication, training, research, education and services." Through the various educational opportunities it sponsors and the many articles its members supply to this magazine, STMA seems to be achieving that mission. Witness the following letter from Recreation Supervisor Eric V. Schill.

"The City of Mountain View is in Santa Clara County, California, and is located in the heart of Silicon Valley. The approximate population is 69,000.





On Memorial Day, Frontier Field in Rochester, N.Y., became the site of the first conversion of a baseball diamond to a professional soccer pitch. Photo courtesy: James D. Lathrop.