

Indyk continues, "Water availability is a critical factor in all sodding situations. The irrigation source and supply should be adequate to supply water as needed, when needed." Immediately following installation, keep the sod pad wet and adequate moisture in the two to three inches below the sod pad. Deep watering is of no value to the sod until the roots extend deeply enough to use it. Monitor root growth and adjust irrigation as needed to adapt to that growth. Irrigation may be needed two or more times each day to keep the sod from drying out. Also, irrigation needs may vary in different sections of the field depending on the soil profile, sun, shade, temperature and winds, so watering must be adjusted accordingly.

"The first mowing of sod should be determined by the height and growth rate of the grass," Indyk says. "Sod top growth will continue whether the roots have knit into the underlying soil or not. If mowing is done properly and carefully, and with appropriate equipment, there is no need to wait for the sod to knit."

**Mid-Season Sodding:
The Specifics**

Dr. Tim Bowyer, general manager of the sports turf division of Southern Turf Nurseries in Omega, GA, (a subsidiary of the Warren Group of Crystal Lake, IL,) offers this advice on mid-season sodding: "When sodding at any time, you must consider the physical site location and field specifications. For example, for fall and winter sports, resodding in the south typically requires a bermudagrass sod overseeded with perennial ryegrass. If a bermudagrass field had not been overseeded, a dormant bermudagrass sod would be used."

Replacement may be required because field damage is extensive, with holes, gouging and divoting conditions of such severity that player safety could be jeopardized. Or, field owners could decide the aesthetics of the field are inadequate for a highly attended or televised game. "Under these circumstances, there may be only a three to six-day window to make the repairs," Bowyer explains.

"Generally, only the severely damaged turf section will be replaced. Thick-cut sod, in the 1-1/2-inch to two-inch range, offers greater stability in these resodding situations. Big-roll sod is preferred over slabs and small rolls because there are fewer pieces involved and fewer edges. The size of the roll must be adjusted to compensate for the extra weight and bulk of the thick-cut sod. The weight and handling combine to limit how long a strip can be cut."

If a heavy-soil, thick-cut sod is placed over a sand-profile field, it will be necessary to aerify and topdress with a sand as soon as possible to increase drainage and infiltration. Following use, the sod and heavy soil can be cut out with a sod cutter or chopped out. The area can then be refilled with the proper soil mix, leveled, watered and allowed to settle in before the washed sod, or thinner sod with an appropriate matching soil are installed.

continued on page 22

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Mid-Season Sodding

continued from page 21

Consider Long-Term Solutions

John Huber, president of Huber Ranch Sod Nursery Inc. in Schneider, IN, adds this advice, "Mid-season replacement for repair of severely damaged sections of football and, maybe, soccer fields is the only time when the use of thick-cut sod

is logical. There are several disadvantages to thick-cut sod. It doesn't root significantly below the imported soil because, with the 1-1/2-inch to two-inch cut, roots have growing space and aren't forced to go deeper. It doesn't drain as well as thin cut or washed sod. In wet situations, it tends to turn to mud. But it does have an advantage — increased stability."

If thick-cut sod is grown on the soil profile that matches the soil profile of the

field with a grass-seed blend matching that of the field, it could be a long-term solution, rather than a stop-gap measure. Big roll sod is the sensible form for athletic field applications because it's faster to install, gives greater stability and has fewer pieces and fewer seams. But even thick-cut, big roll sod will shift somewhat during the action of play and ideally would have a period to knit in before use.

Dr. Indyk adds, "With most football fields, mid-season sodding is used to repair the center of the field, between the hashmarks. Generally, such replacement runs from goal post to goal post. Big-roll sod is the sensible solution."

Huber, Bowyer and Indyk agree on the importance of proper preparation and installation procedures. Huber adds, "For player safety and better visual appeal, the edges of each sod section should be 'manicured' so there are no visible seams. It may be necessary to make an application of iron following the installation to develop a more uniform green. This masks the variations in color between the sod and existing turf. The sports turf manager will need to allow a day or two after application for the color change to occur."

Following installation of thick-cut sod, the sports turf manager will need to alter maintenance practices, especially water management, to compensate for the differing soil conditions. All three experts agree on the advisability of removing sod grown on a soil differing from the field's soil profile, preferably immediately following use. They also know that doesn't always happen. Huber cautions, "There will be long-term, detrimental consequences if the non-compatible sod and soil are not removed. The sports turf manager should be prepared to compensate. It will be necessary to aerify intensively and attempt to reintroduce desirable soil into the aerification holes to recover somewhat from the introduction of the other soil type."

Small Spot Repair

Certain sections of athletic fields are notorious problems. All three experts put soccer goal mouths in this category:

Indyk says, "With so much pressure for constant use of soccer fields, seeding repair of the damaged goal mouth areas seems to be wasted effort. If there's a choice, use sod instead."

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Bowyer says, "An option for specific sections of damaged turf, such as soccer goal mouths, where there are demands for immediate field use, are the Netlon-amended, sand-based soil, turf squares. These are three to six-inch deep, larger sections of turf grown with edges around them so that they can set into place and put into play immediately. Most other sods need some time before they reach playability."

Choosing the right turf type is an important factor in your success. Bowyer says, "Bermudagrass is the best quality turf for sport fields because of its basic growth characteristics. In northern regions, bluegrass/ryegrass blends do have some rhizome forming abilities, but are not as vigorous and don't produce as much lateral strength as bermudagrass. The further north we can push bermudagrass, the better to have a base that can withstand the stress of play."

Winter-hardy bermudagrass can be used in some sections of the north on baseball fields that can be covered during

the winter months to temper the temperature variations and reduce desiccation. "Zoysiagrass is an option for the base turf of northern fields. It has the aggressive tendencies to dominate and form the needed densely-knit cover," Bowyer continues. "I'd hope there would be some serious research on its use as turf for athletic fields. It could be overseeded or dyed green just as bermudagrass is in the south."

While mid-season sodding can offer a "quick fix," it's not the ultimate solution. Bowyer says, "Some field problems go back to selecting the wrong blend of turf in the first place, or to such poor maintenance practices such as applying too much nitrogen late in the season, thus forcing lush growth and shallow rooting. But the general problem is with intensive field use, which is probably the hardest thing for the sports turf manager to overcome. Pre-planning and maintenance practices can compensate somewhat, but a better solution is wise field-use management. Mid-season sodding is a tem-

porary band-aid solution, not an answer to the turf problem."

Huber agrees, adding, "To avoid the need for mid-season sodding, sports turf managers must focus on building the turf root system throughout the year so that it can withstand the extreme stress during the playing season. It also would help if fields were made more wear tolerant during construction, perhaps through the use of some of the newer construction materials now available.

Bowyer says, "Back-up sources of sod, even if grown in the sports turf manager's own on-site nursery, do offer some mid-season insurance."

Indyk and Huber agree with Bowyer. "If sports turf managers were able to have better control of field use, they would have better control of the need for mid-season turf replacement." □

Steve and Suz Trusty are partners in Trusty & Associates, a consulting firm located in Council Bluffs, IA. Steve is assistant-chair of the public relations committee of the national Sports Turf Managers Association.

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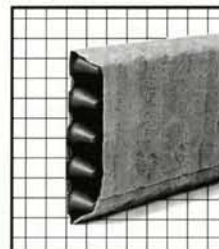
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Getting Ready for Old Man Winter

By Vince Patterozzi

As we all know, a sports field irrigation system constitutes a substantial financial investment. Therefore, it is our obligation as conscientious sports field managers to protect that investment as best we can.

Every year the sports field manager must make the decision of when and how the irrigation system is to be winterized, if at all. For those of us that must, it can be a day-to-day or week-to-week process of determining exactly when we should or can winterize our systems.

At this point, an explanation of what constitutes winterization is in order. Winterization of an irrigation system ensures the system and all of its components are placed in a condition of nonuse and are safe from damaging climatic conditions such as freezing, heaving and general exposure to sub-freezing temperatures. It is performed after turfgrass or other plant growth has ceased. All zones have different dates when winterization procedures need to be completed. However, no matter which

zone you work in, the criteria for determining when to winterize is the same.

A Chilly Checklist

Among the criteria that must be factored into winterization timing are ambient air temperature, soil temperature, soil moisture content, growth stage of the turfgrass, general sports field condition and length of the season of the particular sport using the field.

At the high school or college level, fall sports are generally finished by the first week of December. By contrast, the pro-

Pump Station Checklist

The following is a winterization checklist that works for most pump stations. Maintenance on pumps should not be attempted unless you have the proper knowledge and tools to work on pumps. Before beginning a winterization program, consult the manufacturer's technical guidebook on winterization.

- ✔ Always refer to the maintenance manual for winterization details;
- ✔ Shut off the water source, drain and blow out the sprinkler system;
- ✔ Drain the pump completely, leaving all drain plugs open;
- ✔ Blow out all pilot lines and the pilot device on the control valve, leaving the tube disconnected;
- ✔ Make sure all of the water in the pressure switch is out, leave the tube disconnected;

- ✔ Tighten all connections, electrical and mechanical;
- ✔ Use steel wool and/or sandpaper to remove any rust;
- ✔ Use a high-quality rust-proof paint to cover rusted areas;
- ✔ Grease all fittings on the pump station;
- ✔ Remove aluminum intakes for the winter, clean the exterior and interior of the inlet or foot valve screen;
- ✔ Change the oil (turbine pumps); and
- ✔ For exposed pump stations, canvas may be used to cover the unit. Do not use plastic.

Just like a lawn mower or any other piece of equipment, proper maintenance will keep a pump station working like a champ. Winterization enables the equipment to get a safe rest during the winter so it can go to work in the spring.

professional football season will last through mid-January (hopefully!). In a "typical year," if there is one, early December provides ample opportunity to winterize your system. By mid-January, it might be too late and you may run into problems.

Regardless of the time of season that offers the opportunity to winterize, the grounds staff of the Cleveland Browns has always used the same procedure and equipment:

We rent an *air compressor* capable of producing at least 80 to 90 psi air pressure. We then hook it up to a quick-coupling valve, located between the irrigation pump and the mainline shut-off valves.

We then systematically *open each lateral irrigation line electric solenoid valve*, using our irrigation controller. Prior to opening the solenoids, we make sure the main water supply valve is shut and the pump is locked out in the nonoperating position.

It is important that two things occur at this time. First, before turning the air valve on, make sure you have a solenoid valve open or a quick-coupler key in a quick-coupler valve so that you do not get excessive pressure buildup in the irrigation piping. Second, once you are sure you have a pressure-relief point, open the air compressor air valve slowly so that the air slowly bleeds into the irrigation piping network and through the irrigation heads.

We will typically "blow" our mainlines and submains out before we open the lateral-line electric solenoid valves. This way, we don't push a large volume of water through the irrigation heads.

At the point where you have pressurized the lateral lines and you are "pushing" water through the heads, you can partially close your quick-coupler relief key so that you can maximize your head pressure.

After we have blown the entire system out and the weather permits, we remove all of the heads and cap the swing joints. This procedure allows us to clean or fix any heads that are in need of repair over the winter.

It is also a good idea to inspect your valves and pump(s) at this time and perform any necessary repairs. In the spring, we replace the heads onto the swing joints and recharge our system.

During the 1994-95 football season, we did not winterize the irrigation system at Cleveland Stadium until January 17. The Browns were in the playoffs and the early winter had been warm and dry. We were overseeding, fertilizing, watering and mowing as late as January 16. This may sound unusual, but being a few hundred feet from Lake Erie assists us sometimes late in the year by keeping soil temperatures warm. □

Vince Patterozzi is the head groundskeeper for the Cleveland Browns.

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HAPPENINGS

Free Advice for What Ails You

Got a sore wrist, tennis elbow, hurt finger? These ailments, along with other pains of the wrist, hand and elbow will be discussed free to callers to the American Physical Therapy Association's (APTA) hotline during October, National Physical Therapy Month. The toll-free number is (800) 955-7848 and will be available October 27-28, 9 a.m.-8 p.m. Eastern time.

The hotline is sponsored by APTA, the Oregon Physical Therapy Association, Washington Physical Therapy Association and the Section on Orthopaedics as a public service. It is not intended to be a substitute for a visit to a other health care professional. Callers may request free brochures, including *Taking Care of Your Hand, Wrist and Elbow*, *What You Should Know About Carpal Tunnel Syndrome*, and *Taking Care of Your Shoulder*.

Officers, Directors, Committee Chairs Named

The 1995 board of directors of the Outdoor Power Equipment Institute was announced during the association's 43rd annual meeting in Kiawah Island, SC.

Serving on the board this year are: Kendrick B. Melrose, chairman, The Toro Co.; Warner C. Frazier, vice chairman, Simplicity Manufacturing Inc.; Patrick W. Curtiss, secretary-treasurer, Honda Power Equipment Manufacturing; Michael S. Ariens, Ariens Co.; David R. Campbell, MTD Products Inc.; K.O. Dixon, Dixon Industries Inc.; Jairo A. Estrada, Garden Way Inc.; Jeffrey W. Mack, Lesco Inc.; Mark C. Rostvold, John Deere Co.; Richard W. Shoemaker, Kohler Co.; and L. Edward Shultz, Murray Ohio Manufacturing Co.

Serving as committee chairmen are: Kendrick B. Melrose, executive

committee; Mark C. Rostvold, marketing services; Michael S. Ariens, technical services; Jeffrey W. Mack, EXPO planning; David R. Campbell, personnel; Warner C. Frazier, convention planning and future plans; and Patrick W. Curtiss, finance and budget.

Composting 101

Blending to create valuable soil conditioning products is a well-established practice with nurseries, landscape contractors and natural-fertilizer suppliers. However, composting as a method to turn greenwaste into valuable compost and mulch is not so widely practiced.

A new publication by JG Press of Emmaus, PA, *Green Industry Composting*, provides all the knowledge that turf managers need to make composting a profitable part of regular operations.

The 72-page publication was compiled by the editors of *BioCycle*, Journal of Composting and Recycling. For more information, call (800) 661-4905 or (610) 967-4135.

ROOKIES

PRODUCT UPDATE

Dethatcher and Verticutter

With its flexible tines, the EasyRake "combs" grass only a quarter inch into the soil, so it cannot penetrate into the root structure. If a more vigorous process of dethatching or aeration is desired, the company also offers a vertical slicer that cuts into the soil with hardened steel slicing knives. For established turf not in need of complete renovation but with a thatch problem (dry spots, fungus, etc.), the spring-tine dethatcher can be the solution.

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Riding Mower

The 70-inch Sports Turf Riding Mower is designed especially for sports fields. The shearing action of its six-blade reels

results in a professional striped look. Rather than bruising the grass as it is cut with a rotary mower, the reel cutter grooms the grass and helps build a healthy turf. It offers a fine cut for tough grasses such as bermuda and can groom a half acre in 15 minutes. The six-blade reel turns slower than a rotary blade, meaning the unit uses up to 50 percent less gas than standard rotary mowers. Additionally, the reel blades require sharpening less often, saving time and maintenance costs.

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Overseeder/Dethatcher

The Ryan Mataway Overseeder features a new design for better traction and maneuverability. Both a dethatcher and overseeder, the Mataway features heavy-duty snap-out reels that allow the operator to select the type of blade and spacing desired for vertical slicing. The

seed-rate adjustment feature helps ensure proper seed flow. Two-inch reel spacing enables overseeding in one pass. By removing four pins, the overseeder becomes a standard dethatcher. The 11-hp Kohler Command engine meets all current California Air Resources Board (CARB) emissions regulations. Other features include a 19-inch seeding width, a removable weight bar for increased traction and a depth adjustment of up to 1.5 inches.

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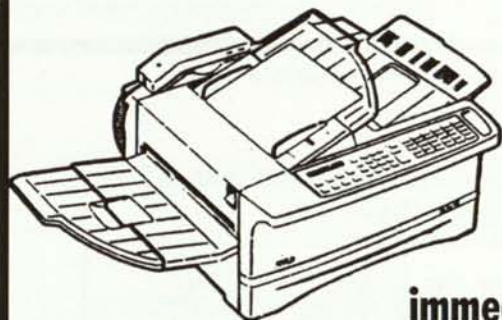
This dry line marker mounts with one pin on the front of an athletic-field maintenance machine. The feed rotor is driven with a 12-volt motor and produces a two- or four-inch-wide line.

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National Mower	12
No. Carolina Turfgrass	21
Ohio Turfgrass	13
Partac Peat Corp.	23
STMA	5-30-31
Turf Specialists	13
Turfco Mfg., Inc.	7
West Coast Turf	22

STANDARD GUIDE SURVEY FOR CONSTRUCTION AND MAINTENANCE OF SKINNED AREAS ON SPORTS FIELDS.

The Technical Committee of the STMA has offered the support through its membership to assist the ASTM (American Society for Testing and Materials) to develop standard guidelines for the construction and maintenance for Athletic Skinned Areas. These standards will pertain to not only skinned areas for baseball and softball, but any soil only athletic surface where soil stability, drainage, playability and safety is of concern. I would appreciate your assistance in the development of these standards by first filling out the enclosed survey and returning it to: Guise & Associates, 515 W. Commonwealth Avenue #215, Fullerton, CA, 92632.

SKINNED AREA SURVEY

1. Check one Baseball Softball (use two forms if you maintain both types of fields)

Have you had your soil in the skinned areas of your fields tested for particle size and distribution? If yes, complete the following by percent or enclose lab report with survey.

List area(s) infield, mound, baselines, etc .	Very Coarse 2 - 1 mm	Coarse 1 - .5 mm	Medium .5 - .25 mm	Fine .25 - .10 mm	Very Fine .10 - .05 mm	Silt .05 - .002 mm	Clay < .002 mm

For each soil described above, indicate whether you consider the soil to be (a) very good, (b) good, (c) fair, (d), poor, (e) very poor. Describe limitations for each soil, such as "too sandy," "too clayey," "too hard," "dusty," "poorly drained," "etc.

2. Do you use the same soil mix for your skinned areas between first and third base as well as the pitchers, catchers and baseline areas?
3. Check the box or boxes that best represent the field design at your facility. For multiple fields, place the number of fields in the boxes.
- Entire field soil Entire infield soil, outfield grass Grass infield only
 Grass field w/skinned area Artificial field w/cut outs Other surface (Specify)

4. List in order of importance, the criteria necessary in selection of material for skinned areas. (List in order of 1 being most important)
- Drainage (surface) Drainage (Sub-surface) Color
 Traction (Players' footing) Particle size/distribution Ease of grooming
 Moisture retention Depth of profile require
 Other criteria (Specify) _____

5. List the depth and soil mix used in the construction of:
- Pitchers' area _____
- Home plate area _____
- Skinned areas _____

6. Which areas are the most difficult to maintain? (List in the order of 1 being the most difficult)
- Pitching area Batters' boxes Catchers box
 Baseline (home-first, third-home) Base sliding areas Base lead-off areas
 Skinned area (first-third base) On deck circles (soil only)

7. Check off equipment used to maintain and groom your skinned areas.
- Scarifier drag (Nail drag) Float, leveling drag (Straight edge)
 Other drags _____ Rakes

- Mats (Chain link)
- Mats (Coco mat or carpet)
- Mats (Link mat)
- Mats, other _____
- Screen (soil) 1.8" mesh
- Screen, other _____
- Hoe
- Commercially available groomer

- Brooms
- Tamps
- Shovels
- Hose and adjustable nozzle
- Irrigation (in ground)
- Edger
- Equipment to pull drags

8. What materials are used to maintain your skinned areas? (e.g., sand, clay, calcined clay, diatomite, moisture absorbent material)

9. Do you water down your skinned areas prior to play? Yes No
 If yes, what criteria do you use to make this decision? _____
 How much water will you apply? _____

10. How do you apply the water? (i.e. water truck, hose, irrigation in ground, quick coupler)

11. Where are your hose water sources located around your field? (indicate if water not available)

12. What process if any is used in the repair of pitchers and home plate areas?

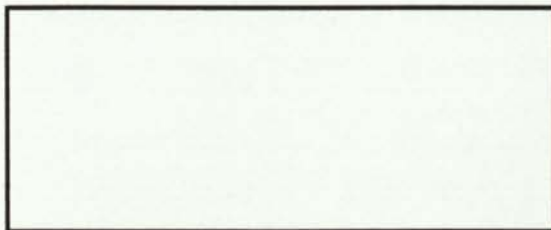
13. How do you protect your skinned areas from excessive water? _____

14. How do you protect your field from excessive wear? _____

15. How much use does your field receive? ___ # of events (___ week ___ month) ___ hrs/day used for sports

16. What other events take place on your baseball and softball fields? _____

17. Draw your skinned area drainage profile, if possible, and include materials used, depth of materials and distance to drain lines.



18. What is the primary level of play on your field? (If multiple fields, indicate # in each category)

- Professional (___ Major ___ Minor league) Professional (Training Center)
- College Secondary School Elementary School
- Recreation facility (Park & Recreation)

19. Do you want the results of this survey? If yes, include your business card or name, address and phone number. _____
