

Bossard values use of SOIL CONDITIONERS

Roger Bossard, head groundskeeper for the Chicago White Sox, learned first hand the importance of a well-maintained baseball field from his father and grandfather.

Over the years questions have risen about the advantages of soil conditioners for sports field construction and maintenance. Experts in the profession know first hand the importance of using them. Roger Bossard, head groundskeeper for the Chicago White Sox says, "There are two main factors in the success of maintaining any sports field. First the field must be constructed properly. Making the right decisions on building tools, turf, drainage systems, etc is key. Second, that after construction the field is properly cared for and maintained. Soil conditioners are a major part of both construction and maintenance."

Soil conditioners made from calcined montmorillonite clay are used to manage moisture, reduce compaction, and increase drainage on

your sports field. They can be used during construction on the turf areas of your field to improve rootzone growth and also on the skinned areas of your baseball or softball field to enhance footing.

This technology was first introduced for use on major league baseball fields in the 1960s.

Then head groundskeeper for the White Sox, Gene Bossard, used this emerging technology to give his team the home advantage. Gene perfected the use of soil conditioners on his field to maintain its health and beauty and also learned how they could improve footing on the infield for the team.

Gene Bossard regularly incorporated soil conditioners into the maintenance of his field and has been heralded as a pioneer in using this technology. Roger, Gene's son, learned from

his father about the importance of using soil conditioners. As an expert in his field, Bossard teaches others about field maintenance and shares his love for the job with up and coming groundskeepers.

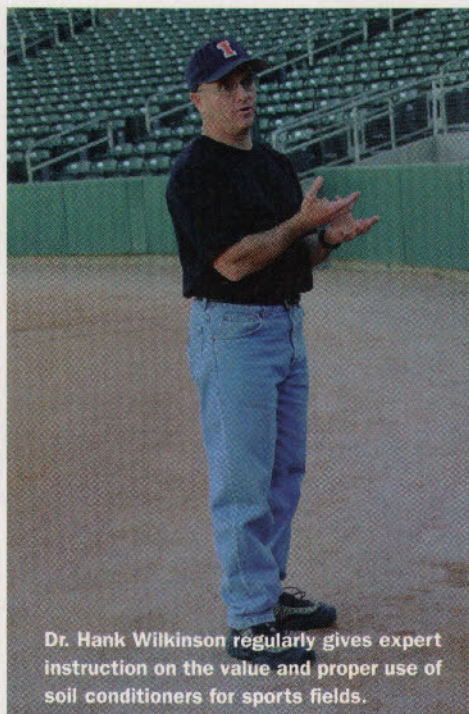
Understanding the concept of how a soil conditioner works and its use is not rocket science. Calcined montmorillonite clays that make up the best soil conditioners are processed to a certain hardness or ceramic-like material. When incorporated into the soil the conditioner creates spaces so the roots grow deeper thus toughening up your grass. As a footing for the skinned areas of your ball field, soil conditioners absorb excess water because of their capacity to suck up moisture; they also help with traction as an athlete is running.

Not just for MLB

Bossard says, "When we start a project, our approach revolves around three considerations. These concepts don't just work at the Major League level. If anything, they're even more important to consider on municipal and academic projects."

- Never forget the purpose of the field—athletics. The decisions you make will affect its ability to be available on game day. Games that have to be rescheduled or cancelled cost money. Inadequate turf and infields can also cause poor playing conditions, which can lead to injury.

- Common sense goes a long way in designing a field. Keep it simple. Once it's built, someone is going to have to take care of it. Your success depends on the decisions you make. In Seattle, the team spent 3 years finding a grass that would proliferate in the



Dr. Hank Wilkinson regularly gives expert instruction on the value and proper use of soil conditioners for sports fields.

Pacific Northwest climate, under a retractable dome, none-the-less.

- The original design concept must not only keep the construction budget in mind, but the maintenance budget as well. Even the best designs will suffer if you can't afford to take care of them.

Professor Henry Wilkinson, an expert in designing, building and maintaining natural grass sports fields, has completed years of research proving the benefits of soil conditioners. "If you want to create the perfect medium for playing ball, you have to do your homework," says Wilkinson. "Understanding the type of soil you have, sand or clay based, will help determine how a soil conditioner can optimize the conditioning and moisture management effects on your field."

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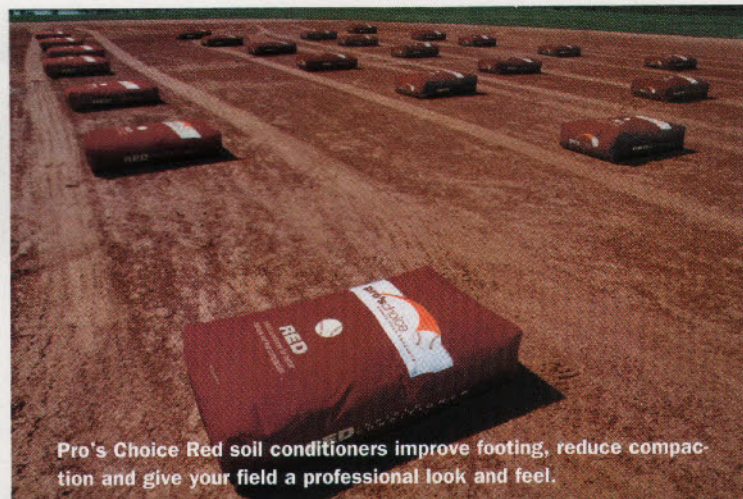
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durable and don't break down into dust. Find a granular size distribution that best meets your needs and your budget. For your turf areas, a hard, irregular-shaped soil conditioner will give you the best performance.

"For the infield, I recommend choosing one with the reddest color and the least dust," says Bossard.

When it comes to maintaining the field there are a few things to consider. "In baseball it's important to remember," says Bossard, "70% of the action takes place on the infield, so that's where your resources should be focused. Don't forget the turf though, proper maintenance will prevent more expensive repairs down the road."

- Every groundskeeper should know his or her athletes' wants and needs. In the Major Leagues, that means making sure that the franchise players have conditions that optimize their talents. At other levels you need to ensure the field is safe and ready when needed.
- You should choose the best base clay and soil conditioner that fits your needs. Of all the soil structures out there, only about 10% are even suitable for a baseball field. You have to find what's best for your situation.



Pro's Choice Red soil conditioners improve footing, reduce compaction and give your field a professional look and feel.

- Make sure your drainage options meet your needs. The number and placement of your watering heads is critical to good irrigation. Your clay should be moist to a depth of 1/2-3/4" at game time. Of course, weather factors like wind and humidity will play a role in the amount of water needed.

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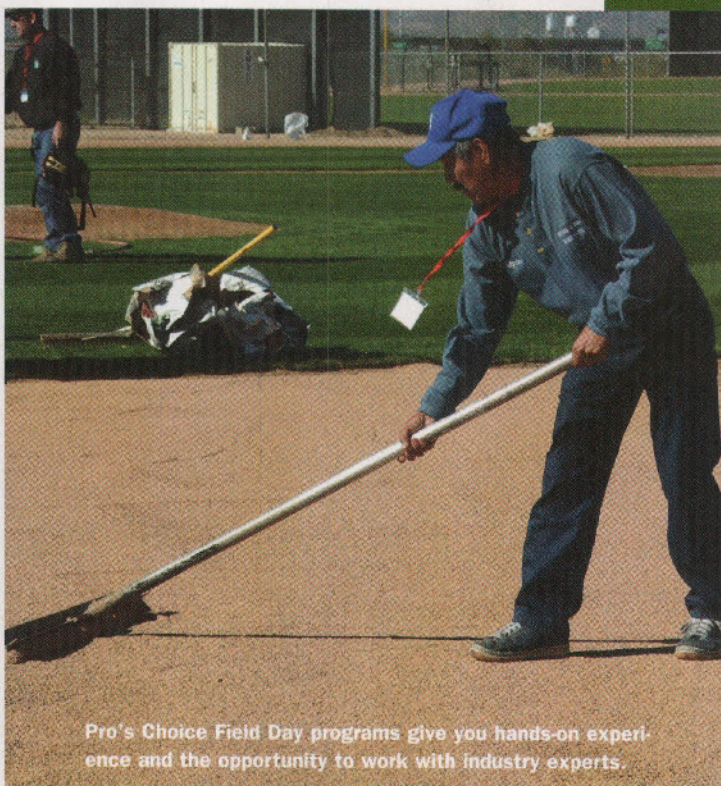
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- Find a knowledgeable/skilled groundskeeper for guidance. There are many good resources and a pool of knowledge out there to help you. The best resources are often other groundskeepers. "The best way for a new groundskeeper to learn about field maintenance is to actually do it. In this business, hands-on experience is the best way to learn," says Bossard.

The skinned areas of the field are most important to the player. "If there is a bad hop you just cringe and you never want to see it. It happens though," says Bossard. "The biggest pressure moments are when you are in the playoffs. God forbid you have two outs, you're winning by a run and someone hits a ground ball and it takes a bad hop and you lose the World Series. Trust me when I tell you that every groundskeeper is concerned about how the field plays. Soil conditioners make the difference.

"As the person responsible for my team's safety and comfort on the field, I am very conscience and selective about the products I use," says Bossard. "Every groundskeeper, no matter at what level of play, should be just as aware of their field. Going to school and learning from a book is a plus but the

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most important part is going out on the field and learning it hands-on."

Pro's Choice sports field products sponsors local field day programs that provide you hands-on experience to learn about proper field construction and maintenance of baseball and softball fields. Pro's Choice Field Days brings expert knowledge to the local level. You'll have professional groundskeepers at your disposal to ask questions that pertain directly to your field and your problems. This one-day program is an excellent opportunity to network with groundskeepers in your immediate area and work with knowledgeable people. ■

This article was provided by Pro's Choice sports field products, www.proschoice1.com.

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Using a Field Wear Index

By David Schlotthauer



A charting system developed to assist sport turf managers, the Field Wear Index (FWI), enables better visualization and tracking of the amount of activity occurring on your sport fields. It will permit you to assess the impact these activities will have on their field and allow them to prescribe a level of maintenance that is appropriate for the amount of damage that is occurring on the field.

Some activities have greater impacts on sport fields than others. For instance, football is harder on a sport field than baseball. Activities where the players are allowed to wear cleats have a greater negative impact on an athletic field than activities where the players do not wear cleats. When play takes place during or just after a rain storm the negative impact on an athletic field is multiplied.

An activity that is allowed to take place on a sports field before and/or after the turf is dormant greatly compounds the damage to the field because the turf has stopped growing and the grass cannot out grow the injury done to the field. An activity with 300 participants has a greater negative impact on a sports field than the same activity with only 100 participants. Damage can also occur because of non-sporting uses, for example, a field used as a parking lot or holding a concert on a field.

To compensate for the impact each event has on an athletic field we assign each activity a multiplier.

Here is an example of how multipliers are used: You have an intramural soccer game

on a field lasting for 1 hour. The impact that this game will have on the field is equivalent to people standing and walking on the field for 2 hours. If you have three 1-hour games on the field the impact of those three games

This is a list of the activities that take place on BYU's athletic fields and the assigned multipliers for each event:

Activity	Multiplier
Walking and/or standing on a field	1
Baseball and/or softball	1.25
Parked cars	1.5
Sport camp: baseball/softball	1.5
Marching band practice	1.75
Soccer w/o cleats (Intramurals)	2
Ultimate Frisbee	2
Field hockey	2.25
Football w/o cleats (flag football)	2.25
Lacrosse	2.25
Soccer w/cleats & team practices	2.25
Rugby	2.5
Sport camp: lacrosse and team practices	2.5
Tournaments	2.5
Football w/cleats (College Football)	2.75
Sport camp: soccer	2.75
Sport camp: football	3
Football team practice	3.25
Activity before/after turf dormancy	3.75
Activity during/after rain	4

on the field is equivalent to people standing and walking on the field for 6 hours.

The above multipliers are for sandy loam or sand-based fields. For a heavy loam or native soil sports field add 0.5 to the above multiplier. Each activity will have an area where the impact of the activity will be more intense than in other areas on the field, what I call "focus areas."

Walking and/or standing on a field: This is the base line multiplier.

Baseball/softball: There is localized activity in the outfield, where the outfielders stand, however, most of the activity takes place on the skinned area and on the infield grass. You will also have wear in front of the dugouts and in the coach's boxes. This does not include the care needed for the skinned area.

Field used as a parking lot: Extreme wear will become evident in the area between the

parking rows. The paths to the exit gates will also receive excessive wear. If a car accelerates too fast or the driver spins out on purpose some turf will be lost due to peel out. If the field is wet this multiplier must be raised.

Soccer: A continuous motion game and some wear can take place anywhere on the field. Extra wear will take place at the goal mouths, the corner kick areas, in the center area, and along the sidelines where the teams stand and a referee runs up and down.

Ultimate Frisbee: A continuous motion game. The play takes place all over the field. Wear areas can be at the goal lines, also used as the toss-off lines, and along the sidelines where the penalty and team boxes are and where a referee runs.

Field Hockey: A continuous motion game, however, you will have excessive wear areas in the goal mouth areas and in the shooting

circle area. Hockey sticks have the potential to take out divots as the players hit the ball.

Football: Damage caused in between the hash marks and near the goal line. Wear will also occur along the sidelines where the teams and other spectators stand. If the games are televised you will also have damage from the camera cart moving up and down the field.

Lacrosse: A continuous motion game. Excessive wear will occur at the goal mouths in the attack/defense areas, along the sidelines where the referee runs and around the in team's bench area.

Rugby: A continual motion game. Play will move all over and damage can occur anywhere on the field. Additional wear will take place along the side lines where the teams sit and a referee runs. The scrum can take place anywhere on the field where a tackle is made. A scrum can be very damaging to turf.

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Team practices: Will cause wear on specific areas of the field where the players do drills in the same areas repeatedly. Another area is around the goal area where the team will repeatedly practice plays starting from the same spot and working toward the goal.

Turf dormancy: After the turf has gone dormant any damage done on the field is compounded. The turf cannot outgrow the damage inflicted.

Rain: Damage done by play during or just after rain can cause severe surface disruption in a surprisingly short period of time.

Any activity such as a sport camp or tournament play will increase the activity multiplier because of the number of participants that are involved in the event. For example, 300 people using a field will have a greater impact than 100 people using the same field. Other consid-

erations you should include beside the length of the activity are setup and take down for the event.

How can we use this information?

Calculating the Adjusted

Wear Index Value (AWIV)

A 4-hour college football game calculation would look like this:

Activity	Length of Activity	Multiplier	AWIV
Football (college)	4 Hours	2.75	11

Multiply the length of the event by the multiplier to get the AWIV.

FIGURE 1

[illegible]

Now that we know the basic principles behind how the FWI works, we need to transform the results into information we can use.

Step 1: I apply this information during the winter. Before the growing season starts I sit down and record the various events that will take place on a field for the year. You can use your past records for when sports are scheduled to be played, when team practices will be held and so on. I record all of this information on a preseason FWI yearly log (see Figure 1).

Use one sheet for each of the fields you plan to track the activities on. Figure out the AWIV for each event and then add the last column to get a yearly AWIV at the bottom. You can also chart the AWIV by the month if you wish. Next, compare your yearly AWIV with the activity rating at the bottom of the form. This number will prescribe the amount of maintenance you should be doing to keep your field in a healthy condition. Each of

these maintenance levels will be discussed in further detail shortly.

Step 2: During the course of the growing season I keep a FWI monthly log sheet for every activity that takes place on the field and for every month during the growing season. I keep a running total of the monthly AWIV and compare this number with the number I calculated on my preseason FWI yearly log, using the monthly breakdown I calculated. If the AWIV number is higher than the AWIV number on the preseason log sheet I can adjust the level of maintenance upward to anticipate the increased use of the field. I can also adjust the level of maintenance downward if the numbers show a decrease in field use.

As you use this system year after year the calculating of the preseason FWI yearly log becomes easier because you have the FWI monthly log sheet from the previous year to use. If you put the preseason FWI yearly logs

and the FWI monthly log sheets in a spreadsheet program the calculations are much easier to do.

It becomes quite easy to adjust your maintenance program swiftly using the FWI.

Activity rating

The activity rate shows what maintenance is prescribe for your calculated AWIV value. The maintenance schedule is as follows:

Level 1: Light maintenance: equal to or less than 250 AWIV a year. Perform one or two hollow core aerations a year.

Level 2: Light to medium maintenance: 251-300 AWIV a year. Perform between two and four hollow core aerations a year and one topdressing a year.

Level 3: Medium maintenance: 301-350 AWIV a year. Perform hollow core aeration once a month, one deep tine aeration a year, one topdressing a year, and one overseeding a year.

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Level 4: Medium to heavy maintenance: 351-400 AWIV a year. Perform hollow core aerations once a month, two deep tine aerations a year, two top-dressings a year, and two or less over-seeding a year.

Level 5: Heavy maintenance 401-450 AWIV a year. Perform hollow core aerations once a month, two or more deep tine aerations a year, or one deep tine aeration and one deep hollow tine aeration a year, two or more topdressings a year, two to four over-seeding a year, and field repairs, for instance, plugging or minor sod repair.

Level 6: Renovation more than 451 AWIV a year. Perform hollow core aeration once a month, two or more deep tine aeration a year, or one or more deep tine aeration and one or more deep hollow tine aeration a year, two or more top-dressings a year, overseeding once a month, and major field repairs by plugging and sodding large areas of the field.

The numerical ranges of the activity rating

are for Kentucky bluegrass. Use the species modifier if you have a different species of grass on your fields.

Species	Multiplier
Kentucky bluegrass	1
Perennial ryegrass	1.25
Bermudagrass	1.5

Use this multiplier to adjust the numerical range of the activity rating.

Some things you should remember: Not all fields are created equal, and each field is unique in its character. The impact an activity will can have on a field with a heavy clay native soil rootzone will be different than a field that has a sand-based rootzone. Be aware of the characteristics of each of the fields you manage. The Index gives you detailed information of the wear taking place on your fields, by activity; this will allow you to plan an appro-

priate maintenance regiment. This Index's information can also be used to calculate a maintenance budget for your fields.

The important thing to remember is to be proactive; the FWI should not be used as a replacement for walking your fields daily. On the contrary, the FWI is more effective when you do walk your fields daily. Use the index as another tool in your turf management tool box. ■



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