



Employing conditioners a must for infields without water access

What advice can you offer to turf managers who have no access, or very limited access, to water but are tasked with keeping infield skins playable?

MANAGING MOISTURE MOST IMPORTANT

For anyone maintaining infield skins with little or no access to water, managing what moisture is available from Mother Nature is the big key, says Turface Athletics brand manager Jeff Langner. At the parks and rec level and for many K-12 schools, basic soil science knowledge is where every turf manager needs to start. “Knowing how much sand, silt and clay is in your infield enables you to better understand how moisture will affect it,” he says. “An infield with high sand content will drain well, but may be too loose if you can’t keep water on it. A field with high clay content can get slimy when it rains, and then becomes hard and cracked when it dries out later in the summer months. Managing moisture correctly throughout the season is the way to keep the field safe and playable.”

Langner adds that using calcined clay

conditioners is a must for skins that don’t receive regular irrigation. “Conditioners are a moisture management tool for infield skins; they manage excess water by increasing absorption levels, and their ability to hold water and release it over time provides the sought-after balance,” he says. “Turfacer is an ideal conditioner that has high porosity and adds water-holding capacity.”

He recommends that calcined clay be incorporated into the top 4 inches of your infield mix, if resources allow, but at the very least should be used as a topdressing to provide a buffer between players’ cleats and the infield clay. Using calcined clay is especially important in the mid to late summer months, Langner says, when infields really begin to dry out. “If you can’t add moisture daily the clay will get hard. Turface will relieve compaction, and when Mother Nature does provide moisture, the conditioner will work like a sponge, holding onto the water

and then releasing it over time, prolonging the time before the skin starts to crack.”

Langner says not all conditioners are created equally and that water-holding capacity should be more important than appearance when making buying decisions. “Moisture management is why you use these products,” he says. “If you cut conditioners out of your budget you’re doing a disservice to your infield skin and might not save money anyway, since your labor other costs will go up trying to get the field playable.”

STRIVE FOR CONSISTENCY

As we all know, water is the key to making any field safe or playable. When fields are being constructed, one of the first things discussed is will the field be irrigated or not? If it is being irrigated, location of quick couplers is very important to allow for optimal watering of the skinned infield. If the field is not irrigated (typically found on older, existing fields), then the job for the turf manager just became harder and he/she has to be more creative in ways to create a safe/playable skinned infield.

Some things to keep in mind for the fields that are in the no access/limited access to water are the products that are purchased for the infield skinned. With the right products, the situation presented above can be minimized with these selections.

We recommend the following:

- Proper Infield Mix. You want to find an

infield mix that has a higher sand content, lower silt percentage to help reduce the amount of dust, and have an SCR (silt:clay ratio) ideally of ~.5:1. You will need to get your infield mix tested to see what the percentages are in the blend. Conditioners can be added to help retain water that is either applied on a limited basis by the turf manager or from rain that falls on the field. This will be a temporary fix and a short-lived solution to making the field playable.

- The turf manager should become creative in ways to water the field. We have heard of fire departments adding water to the field the night before a tournament.

- If water is available, try to do deep heavy watering to saturate the infield mix. As the field dries, the water will move to the top of the skinned infield and help keep it playable. If you have ever had a field too wet (muddy) for a game, then you know the limits that your field can take when it comes to watering.

- Water on a routine basis to help keep the field consistent. A well maintained field plays its best when it is consistent day in and day out. With any field, that is what the turf manager should strive for and give the play-

ers the best opportunity to be successful in the game.-Glenn Lucas and Bill Marbet, Southern Athletic Fields

USING CONDITIONERS A MUST

Managing infield skins with limited water is where the importance of a product like Pro's Choice comes into play. Because Pro's Choice conditioners are made from calcined montmorillonite clays they have the ability to absorb moisture, release it and absorb again. When properly installed throughout the top 3 inches of your infield mix, these conditioners will absorb the water from rain, hold it in the granules, and release it back into the surface as the base clays dry out. Pro's Choice conditioners help keep moisture in your profile when you don't have the benefit of a hose.-Dave Cygan, Pro's Choice/Oil Dri.

TOPDRESS WITH CONDITIONER AT THE MINIMUM

Moisture management is key to the success of an infield. When a sports turf manager is unable to add water to a field, it becomes critical that they conserve the water that does reach the infield. This can be ac-

complished by adjusting infield mix composition, adding an infield topdressing, tarping, and adjusting dragging techniques.

Choosing an infield mix with a higher percentage of silt and clay and a lower percentage of sand allows the infield to store water longer. Fields with higher silt and clay content move water more slowly through the profile. Those same field surfaces will become extremely hard when dry. Fields with higher sand content lose their store of water faster and can become too loose when dry.

Adding an infield topdressing can help shield the infield mix from losing moisture through evaporation. Effective topdressings include calcined clays, vitrified clays, or crushed aggregates. Likewise, placing a tarp over the infield traps and conserves that much-needed moisture.

Finally, field managers can adjust their maintenance practices. Avoid deep tine dragging which brings more infield mix to the surface. This dries and loosens the field. When dragging is necessary, disturb as little of the infield surface as possible by mat dragging or light nail dragging.-Dena DiVincenzo, Waupaca Sand & Solutions

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CONSERVING WATER EVEN IF YOU HAVE IT

In the southwest the numbers 1,075 and 1,145 have great significance. Contained behind the Hoover Dam are the waters of Lake Mead that supplements the water supply for Arizona, California and Nevada. When the waters are above 1,145 feet, it constitutes a surplus. When the waters are below 1,075 feet it is considered a shortage and triggers agricultural water reduction for the states involved. The average water level in Lake Mead is lower than it has been in more than 40 years.

While we won't get into a discussion about the intricacy of Arizona-California-Nevada water rights, the low levels at Lake Mead, devastating drought nationwide, and 2012 being the warmest year on record for the US, all serve as reminders for us field managers in the southwest, to conserve water.

Research in soil and moisture interaction have uncovered that at a 4-12% moisture content, groundskeepers of baseball and softball fields can take advantage of natural moisture binding of the soil by surface tension forces of attraction. This simply means that the ideal moisture content for play on any infield is a "damp soil consistency." For managers of baseball and softball fields, to prevent soil particles from destabilizing, increase field use and ultimately minimize injury potential, the main concern should be achieving the ideal moisture content of 4-12%. But how can this be accomplished with little access to water?

While having the correct particle size on your infield to begin with is important, you know just as well as I do that water (or lack of) changes the stability of any field, regardless of particle size. In engineering terms, the load bearing and shear strength of the infield will increase and decrease with varying amounts of moisture. We have focused our research on the interaction of water and soil particles for the past 30 years. During this time span, we started to view damp soil consistency as more of a range or window, rather than a specific destination. In the Southwest, this window can be very short. During monsoon season (July through September), a groundskeeper may have to maintain an infield on a dry, 100+ degree day, and in an instant a monsoon storm could drop 2 inches of rain. The window

has been shortened on both sides—too dry (below 4%) and now too wet (over 12%).

Imagine trying to maintain this window on a 14 field, professional spring training complex. Observing this struggle led us to develop Stabilizer, which blends into the pore space between soil particles. It absorbs 15x its weight in water and forms a cohesive gel, expanding the damp soil consistency window longer.

There is just one thing Stabilizer needs to help lengthen the damp soil consistency window: at least some water. What if you don't have access to water at all? Polymer technology now provides the soil particles with the same amount of cohesion that damp soil tends to have, eliminating the need for water and any water related downtime. With Hilltopper products, we can actually guarantee more playing time during weather extremes. You will notice there is no need to water between a dry double-header and on the flipside no downtime after a storm. Since water sheds off the surface laterally, it cannot penetrate the soil, and therefore will not freeze in the winter.

Remember, keeping an infield between 4-12% moisture content should be one of the highest priorities on an infield skin to maintain playability and reduce injury potential. Finding ways to expand your damp soil consistency window now will pay off tremendously in the future.—Clayton Hubbs, Stabilizer Solutions, Inc.

DIFFERENT CONDITIONERS FOR DIFFERENT SITUATIONS

When considering how to manage skins with limited access to water, there is a difference between the multi-play type sport complexes that host multiple games every day and single play facilities such as a school's baseball or softball field that has limited play. The answer is somewhat similar to each problem but the selection of infield mix will differ.

For high-use sport complexes that have multiple fields and limited staff it simply is not possible to water the skins thoroughly between back to back to back games. They would rather have firm fields that do not tear apart after a day of heavy play knowing that tomorrow will be the same. Clients may complain that the skins are hard and dry but a hard skin that stays in place is safer than an infield skin that is loose and

breaking up more.

Furthermore, maintenance is reduced when wear areas such as short stop and first base are minor compared to large loose areas that will require a lot of water to compact. Gail Materials supplies all of the Big League Dream facilities in southern California and we provide a mix that has a combined silt plus clay content around 40-45%. We also follow best known science as it pertains to infield mix production with the material all passing the 2mm sieve and the silt to clay ratio always between .5:1.

For single play facilities that have limited play, an infield mix with lower combined silt plus clay content in the range of 25-30% is suggested. Of course all best science also applies with a .5:1 silt to clay ratio etc. The sandier mix will allow faster water penetration and thus easier to maintain however failure to stay on top of the maintenance can result in a looser more unstable surface.

When you have a limited access to water you have to make the water work for you and a great tool to make the water work more efficient is to use a wetting agent. Wetting agents make the water "wetter" by reducing the surface tension of the water, which then allows the water to penetrate deeper in the skin profile. Not all wetting agents are the same nor do they have the same chemistry and they can come in granular and liquid form.

Any reputable chemical or fertilizer representative should be able to assist in the proper selection of a wetting agent. I would suggest using a "straight block co-polymer" which is long term product and is effective for +/- 90 days. The Molten Company, producers of Red Diamond calcined clay, have developed a new patent pending product where calcined clay is impregnated with a patented wetting agent that was specifically formulated for the sports field industry. Molten's new product was introduced and displayed to professional sports turf managers for the first time at the national STMA in Daytona Beach. It's a brilliant idea and preliminary field testing has yielded positive results. It's killing two birds with one stone.

Calcined clay is already widely accepted as a standard tool when it comes to infield skin care. Adding a wetting agent to it will just enhance the efficiency and add to the

value. I foresee this product being of particular value in arid regions where infield soils can become sodic as a result of frequent shallow watering and often with poor quality water. Sodic soils particularly ones with high silt and clay can have poor water infiltration. Providing calcined clay that is im-

pregnated with a wetting agent can only help in these situations, and produce faster infiltration of applied water or rainfall enhancing the infield skin for safer play.

The most important point is to pick the right infield mix based on your needs. Calcined clay and or vitrified clay are still one

of the best tools in a groundskeeper's arsenal. Use them! When renovating infield skins always make sure you till in any new mix that may be added to void soil layering. Also try making your water more effective by using wetting agents.-David Dzwilewski, Gail Materials ■

Keeping your infield playable

By Grant C. McKnight

Editor's note: Grant McKnight is CEO/President of Natural Sand Company, Slippery Rock, PA.

The question on the table is, "What advice can you offer to turf managers who have no access, or very limited access to water, but are tasked with keeping infield skins playable?"

With the record breaking heat throughout most of the United States during the summer of 2012, this general question from turf managers was a recurring one. "How do I keep my infield from getting so hard?"

Any discussion I had concerning this issue always revolved around first educating the turf manager as to why this was happening not only with the a DuraEdge surface, but any other high clay content surface during a normal compaction cycle. (I define a high clay content surface as any one over 15% clay content and possessing an SCR [silt to clay ratio] of less than 1.5.) Infield surfaces that fall into this category are inevitably going to firm up with normal use. The infield surface continually compacts with normal foot traffic and tire roll during dragging between games. This mechanical force coupled with the natural evaporation of the moisture from the top one inch of material will create greater and greater surface soil tension until the surface becomes nearly unable to penetrate with normal maintenance practices. The difficult question now becomes how does a manager relieve this condition with limited time in between tournaments or games without destroying the integrity of the grade on the infield surface.

Be flexible

The obvious answer is just to add moisture; however if you don't have irrigation and it has not rained in a month then a mechanical approach must be employed. I refer to this process as "Light Renovation." It is aimed at relieving excess compaction mid-season without tilling and re-grading, all in less than 4 hours total labor per field.

The first step is to understand that in order to perform this process a little moisture in the profile goes a long way; and that just adding water will only show positive results for a short time. If

you have limited access to water, plan your schedule accordingly, and perform the Light Renovation after you add sufficient moisture.

For those that have no access to water they must adapt their schedule to working with what Mother Nature gives. When you get a shower, then you need to get out as soon as you can and use to your advantage the valuable moisture that is sitting in the profile currently. Too many times I see managers miss the opportunity to relieve soil compaction by letting a little bit of moisture that could just soften the surface enough to work it harmlessly evaporate because it came at a time that the manager was not normally working the surface. Whether you have access to water or not, be as flexible as possible in using what Mother Nature gives you.

Think sub-surface

Now that you have a little moisture in the profile, take advantage. Throughout last year I used an Infield Rascal equipped with a Profile Blade (ABI, Inc., Osceola, IN) to attack an over-compacted infield. The Profile Blade was adapted from the equine industry, where the tool which looks like a knife blade is pulled through the infield surface profile at a depth of 2-3 inches. This mechanical action, acting somewhat like a tidal wave motion, lifts the soil the thickness of the Profile Blade and shatters the soil tension. This action leaves the infield surface loose without causing a need for re-grading. A significant advantage for the Profile Blade over traditional tilling and grading techniques to relieve over-compaction is the reduced equipment costs. Many small budgets do not have access to tractors with high enough horsepower to till and the subsequent need for re-grading afterward can be far out of budget for a typical manager to even consider in-season. A Profile Blade can be pulled with any traditional vehicles that are readily available at most facilities. The need for outside labor is minimal as this process can easily be performed in-house.

Following the Profile Blade, I switch to a VibraFlex ¼ inch nail drag (also by ABI) to float out the loosened infield mix. Acting like a traditional nail board this unit is designed to break up the small pieces and allow a manager to use a mat drag to put a nice finish on the field. The end re-

sult is a surface that will accept water more readily and play softer throughout the cycle until another Light Renovation is required.

Use all the tools available

Once a manager performs a Light Renovation, the next step is understanding the cycle that all infields go through, and maintaining them properly until the next Light Renovation situation inevitably occurs. Now that the surface is de-compacted it will remain that way until weather and normal uses firm the surface again. I recommend limiting the wheeled traffic as much as possible following a Light Renovation, unless you get rain. Take advantage of the softer infield surface when it is drier. It will not firm up until significant amounts of water and traffic are applied. Therefore if you are not expecting rain, your surface will remain fairly consistent the less traffic it gets. Simply light drag in between games and keep the surface consistent.

Once you have a rain or begin to add water voluntarily it is important that you break the surface soil tension that occurs as the clay particles begin to join back together. If you manage this issue in the top ½ inch at least once per week then your surface will play much more consistently throughout the cycle. In order to manage surface soil tension I recommend using a combination of topdressing of your choice and the VibraFlex nail drag with 1/8 inch nails on a 2- inch spacing. The action of the VibraFlex drag will break down the compaction and work the topdressing into the top ½ inch of the mix for a recreational facility and make the sliding surface more consistent without compromising the integrity of the base soil.

Significant compaction only occurs when optimum moisture is achieved inside the profile and a mechanical means is applied to compress the surface. It is an inevitable process, so don't worry about why it happens, make a plan, be flexible, use what Mother Nature gives you, select an appropriate topdressing, and have the right equipment on hand to maintain your surface throughout its multiple season cycles and your high clay content infield skin will perform like a big league manager's daily. ■