

will affect ball roll.

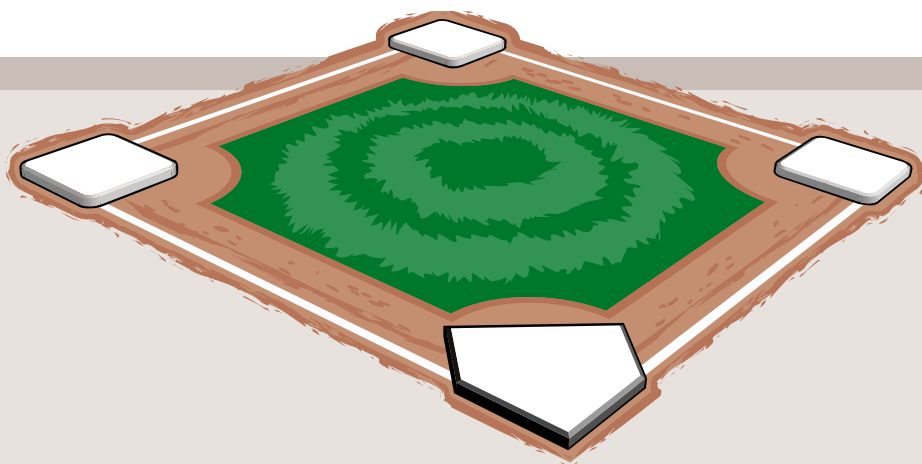
5. My #1 tip to improve the lips would be to get them in proper shape in the off-season, and then work at them routinely to keep them in good shape. It's a lot easier to rake them out and edge regularly than to do it once a year.

KENNY NICHOLS, Westerville City Schools, Westerville, OH

1. We have 26 baseball and softball fields in our school district, 11 at high schools, five at middle schools, and the other ten are at elementary schools and are used for gym classes and by local Little Leagues.

2. On our high school fields, approximately 2.5 hours are spent on each field during each week that the field is in play. The time varies on middle school and elementary fields due to the amount of use, type of play and user groups involved.

3. Coaches, players, athletic directors, volunteers and contractors.



SKINNY ON SKINS

At last month's STMA Conference, Paul Zwaska of Beacon Athletic, the former Baltimore Orioles head groundskeeper, gave a presentation entitled, "The Skinny on Skins." Here are some of the most relevant points he made. *Editor's note: Zwaska made it clear his talk did not include taking "stabilizing" amendments into account but rather Mother Nature alone:*

While some folks refer to taking care of infield skins as an "art," Zwaska said soils are all about science. "A good infield skin is the result of applying principles of soil science," he said. There are two components of skins: the base soil, which should be 3-6 inches deep, is usually imported to the site, crowned to facilitate surface drainage, and is firmly compacted. The

other is the topdressing, which should be ¼ to 1/2-inch thick to act like mulch and control moisture. Anything over an inch Zwaska described as a "beach."

Zwaska said good infield skins have:

- Traction
- Playability (ball bounce affected by too loose or too tight skin)
- Resiliency
- Drainage (you want water to run over the skin rather than percolate through it)
- Contrast or color (darker is better for both players and fans)
- Consistency (not day to day but rather from location to location on same infield—the toughest to achieve)

Infield skins are composed of (or should be) sand, silt and clay; your ideal percent of sand depends on your specific situation. Sand provides the skin's structural integrity, like a human skeleton Zwaska said, and should be between 58-75% of your overall mix. Of this, he said, 40-50% should be retained on medium sieve.

Silt has particle sizes between sand and clay, and acts as a bridge between those

Of four options for providing drainage for your base soil, Zwaska said there is only one way to go: grading the surface ½ to 1%.

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4. We consider our most essential tool to be knowledge—knowing what to do and how to do it. Tools that we use to keep lips from building up include landscape, leaf and tine rakes, stiff bristle brooms, and to remove lips that have formed we use a sod cutter.

5. Learn and practice good field grooming techniques to keep infield mix out of the grass. If it does get in, get it out as soon as possible. Preventive maintenance along the way can definitely save much time correcting lip problems after they form, but more importantly, it helps provide consistently safe playing fields for the athletes that use them. ■

two elements; 10-35% of your mix should contain silt, but Zwaska emphasized that the ratio of silt to clay is the main concern rather than the percent of silt alone.

Clay provides the color and moisture retention of your skin; 15-35% of mix has been the accepted range but again, it's the ratio of silt to clay that should concern turf managers, he said.

The big question is, How do I get the right mix for my field? Zwaska said there is no industry standard and most managers rely on trial and error, while being limited to mixes that are harvested regionally. "There is underuse of infield soil testing," he said. "You can fix what you have unless you know what's already in it."

To get a good sample, Zwaska said you must remove topdressing, and then go down 2 or 3 inches deep into your skin in 8-12 locations from the infield to take samples. Throw all these in box and mix

them around, pulverize them, for one good sample. You then fill a quart-sized, zip-locked plastic bag to be tested.

The answers to two questions dictate what mix your field needs: 1) What are your facility's maintenance resources and practices, and 2) Do you have access to water? After soil test results are in, managers need to classify their fields: do you have water, and is your maintenance "regular," "limited," or "volunteer"? Define the issues through analysis and then solve those issues by implementing a strategy, Zwaska said.

Your soil test's particle analysis will tell you precisely the composition of your infield so you don't have to guess, and tell you the strengths and weaknesses of your existing base soil; Zwaska said to make sure that analysis contains a sand particle distribution test, and then look for the values that really matter—percentages of sand, silt and clay.

First, find your ideal sand content. Here are target numbers from your test: for professional fields, 58-62% sand, 38-45% medium sieve sand, and a 0.5 to 1.0 silt/clay ratio. For intermediate fields, you want 65-69% sand, 45-50% medium sieve sand, and a 0.5 to 1.0 silt/clay ratio. For recreational fields, 70-75% sand, more than 50% medium sieve sand, and a 0.5 to 1.0 ratio is desirable, Zwaska said. Does your sand content match your field type, e.g., professional, intermediate or recreational?

You find the silt/clay ratio by dividing silt content by clay content numbers; 3.0 is too high, for example. Too much or too little silt creates binding problems for your skin, said Zwaska. He said a high sand content and low silt/clay ratio leads to a too-loose skin that chunks out; that means you must increase the silt and clay content with a mix greater than 75%. Low sand content and high silt/clay ratio leads

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to dusty, mucky and greasy surfaces; and low sand with high silt/clay ratio makes for "feathery" dirt. With low sand content your goal is to neutralize the excess silt content. Increase medium sand content and silt/clay content to lower the ratio.

Solving the problem

Once you know your base soil's composition, you can fix the problem, said Zwaska. A typical mix is 40% sand overall (60-75% retained on medium sieve) and 60% silt and clay combined. Your options include removing and replacing your dirt with a balanced mix and that is expensive; otherwise you will need to amend your existing soil. A lower sand content is the goal and you must align that with your facility's resources.

Mixes that work best are specific blends that can be replicated by using engineered soil technology use comput-

ers to custom blend amendments and mixes based on your needs. Zwaska said to ask for test results for brands that specify their soil composition.

Drainage

Of four options for providing drainage for your base soil, Zwaska said there is only one way to go: grading the surface ½ to 1%. A layer of sand below the skin's base soil means you are hoping it drains vertically, same with drain tile and sand layer, and those options, along with cutting in a trench drain, are not recommended.

When it comes to choosing your topdressing material, Zwaska said you need to learn the attributes of the various choices for this layer: calcined clay, vitrified clay, crushed aggregate, or diatomaceous earth. Do you need more moisture? Less moisture?

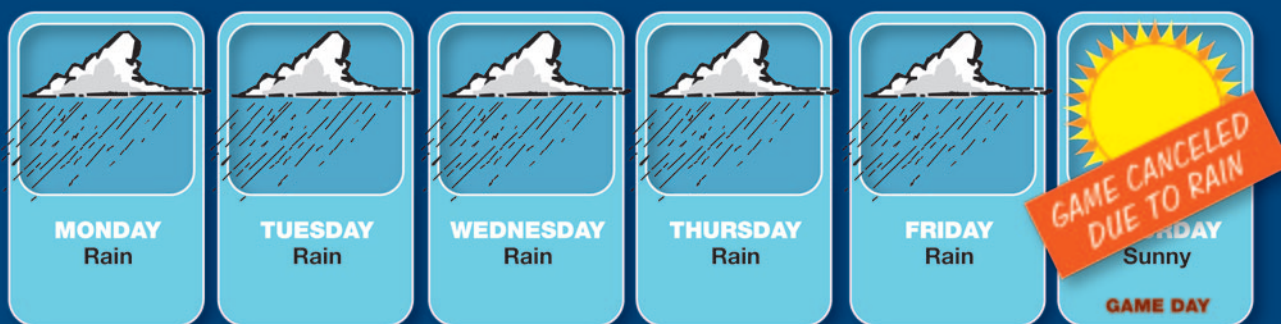
Topdressing advice

Zwaska stressed the benefits of topdressing, including:

- Slows evaporative process from base soil.
- Provides buffer zone between player's cleats and the base soil/
- Improves infield's resiliency and sliding surface.
- Improves playability in damp or wet conditions.
- Simplifies skin maintenance with less nail-dragging and more float dragging.
- Protects integrity of base soil.

Zwaska added that it's important not to nail-drag more than ¼ to ½ inch deep into the topdressing nor too often so as not to affect traction and playability. He said that topdressing is good for even a hard surface regardless of whether irrigation is available.-Eric Schroder ■

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