

Dirt on dirt

BY ERIC SCHRODER

Player safety is the number one goal when choosing and using your infield mix, whether it's providing a good base in Cincinnati for Sean Casey's knees, true hops for a prized Class A shortstop in northeast Ohio, or your field.

Greg Elliott of the Lake County Captains and Doug Gallant of the Cincinnati Reds discussed soil compositions and infield skin maintenance at last December's Ohio Turfgrass Conference in Columbus. Here's a recap of their presentations:



"You must know what you have," Elliott said, "so get a professional soil test. Once you know what you have you can determine what needs done with what materials." His Eastlake Ballpark, 16 miles northeast of Cleveland, and winner of consecutive Sally League Field of the Year awards, features a sandy clay/loam mixture: 58% sand, 22% silt, 20% clay.

Gallant reported that Great American Ball Park infield soil mixture is 71% sand, 13% silt, 16% clay, with

10% of the volume including Turface soil conditioner that's blended at the plant. Don't till your soil amendment too deep, like 8 or 10 inches, because it won't do you any good," said Gallant.

"Soil conditioners can help level your surface and better manage moisture, which limits rainouts and delays," Elliott said. "It's extremely important to use one of these products. This year we are going with Quantum Turf, a new red-clay product from Moltan."

Calcined clay products are inorganic amendments formed by expanding clay at high temperatures (calcining). MuleMix, Turface, Klawog, and Pro's Choice among others all manufacture calcined clay products. Diamond Pro makes a vitrified clay product, which reduces absorption rates and allows water to pass through to the base soil.

"We use 10-15 bags of conditioner every four days. We like to keep 1 to 2 tons in the top 3 inches. Pro League Red (Turf) has smaller particles that Gallant said is better for passing water. The vitrified Diamond Pro product "acts as a barrier between infield clay and the players, holds moisture, and helps drainage."

"Without these products the surface would be more sticky, and less playable," Gallant said. He added that to topdress in Cincinnati he uses a 50/50 mix of Turface and Diamond Pro products (the products are not mixed nor spread together however).



Maintenance

Gallant said his routine infield skin maintenance includes a first-thing-in-the-morning "tickle" which he describes as "light scratching." Then he comes in with a groomer, followed by a drag mat (from Beacon Athletic, about (continued on page 18)

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(continued from page 11) \$100). "A broom can work better than the cocoa mats especially during dry conditions," Gallant said.

"We also like the stiff, waffle mats, which have a beam to fill empty spots and level high spots," he said. "When you're dragging, go slow. Pick up the drag at different points on the infield to disperse loose material. Then rake parallel with your grass edges. I also recommend using bases with plugs that you can drag right over.

"Keep your top 1/4 inch loose, especially if you can't water. Your players will be able to tell the difference," Gallant said. "One other thing: if you edge and keep your grass/dirt interfaces clean, it can go a long way toward making your field look better."

"Controlling your moisture levels is the most important thing," Elliott added. "Each manager has to learn what works for his or her field. You can't control soil composition always, but you do control time for repairs and maintenance."

For managing lips, Gallant said use a garden hose to blow product back into the dirt, then rake the grass up. Ask coaches and players to rake out their lips a few times a week.

Water management

"We hand water six to ten times a day depending on conditions," said Elliott. "Water management is the key to success while dealing with any soil. Over watering can result in muddy, wet conditions, potentially causing an injury. Under-watering can create cement like conditions resulting in injury.

We use hoses to hand water the skin while the team is in town and skin heads while they are gone. The skin heads allow us the freedom to keep the moisture consistent so we are not forced to over water before the team returns."

"Water is everything to dirt; your soil needs it as much as your turf," Gallant said. "At Great American, during a game day, we're puddling the infield every hour until about 2 PM, when we start backing off watering."

Gallant bought skin tarps for his infield dirt use only, which he said were especially useful during Reds' road trips. "We puddle the infield, put the tarp on, and then we don't have to water it when the team's out of town," he said. Gallant says it cost \$4,000 for his customized tarps, but he thinks most managers would be able to use an old tarp and cut to fit their fields.

"If the infield dirt sticks to my foot, it's too wet to work," Gallant said. Once it's ready, gently work your dirt in one direction to open some air channels, Gallant recommended. Use drying agents for puddles (put the agent right in the puddle and then scrap it out, it's reusable) because it changes your soil profile, he said.

To prevent having to do more work than necessary, Gallant recommended daily maintenance, minimizing wind and water erosion, monitoring foot and vehicle traffic, and keep all mechanical dragging at least 12 to 18 inches from grass edges. **ST**

Eric Schroder is editor of SPORTSTURF.

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Sprinklers on Diamonds: Designing Irrigation for Safety and Efficiency

We tapped the American Society of Irrigation Consultants (ASIC) regarding product selection and key design elements for irrigating baseball parks. They forwarded us to a couple of pre-eminent irrigation consultants who relish the challenging task of designing baseball park irrigation.

Jeff Bruce is president of Jeffrey L. Bruce & Company in Kansas City, MO, whose firm has engineered irrigation for Jacobs Field, home of the Cleveland Indians, Victory Field AAA Baseball Stadium for the Indianapolis Indians, Camden Riversharks AA Stadium in Camden, NJ, and Canal Park AA Baseball Stadium, home of the Akron Aeros.

And, Doug Macdonald, with Aqua Engineering, in Fort Collins, CO, which has designed irrigation for Doubleday Field in Cooperstown, NY (see page XX), Dodger Stadium in Los Angeles, and Kauffman Stadium, home of the Kansas City Royals.

ST: What makes sprinkler head selection so important in baseball fields in particular? What are the key site parameters in picking products?

JB: "You have to balance the amount of irrigation equipment on the athletic surface with a uniform irrigation distribution for proper turf growth. The intent is to minimize the potential of athlete injury on the equipment.

"Baseball diamonds are unique; they're not configured in a rectangle like other sports fields. Therefore, head placement for uniformity becomes more difficult. It's harder to tweak head locations. We opt for sprinklers that provide high application rates of water to load the sand system and minimize the operation time, so we design accordingly. If you cut your wetting cycle in half, you reduce the opportunity for disease.

DM: "Sports field applications impose cleaned, high-volume use. So, irrigation has to be installed with a small exposed surface area to avoid injuries and damage. We design with turf heads that provide a good distribution profile for good uniformity. Good nozzle selection also is important. One, because it enables us to adjust arc and radius along the infield border; and two, it enables the turf manager to make minor adjustments in the field.

"There have been times when we've selected pop-up rotors that allow us to set the exposed surface of sprinklers slightly below grade, which also prevents player injuries. As a rule, we minimize the number of heads in the field to avoid player injury. That is a paramount concern for any athletic field."

ST: Do you always spec big turf rotors? Is there ever a need for smaller rotors, pop-up sprays or drip?

JB: "For the outfield and infield, we generally spec identical large turf rotors. Most fields have their collar behind home plate and that space varies between 15 and 25 feet. This is the most challenging area, so we use some of the smaller turf rotors there with stainless-steel sleeves."

DM: "It depends on the application. We use the largest stainless steel, rubber-covered rotors we can with acceptable uniformity, those with a 50-70 foot throw radius. We try to use medium-radius turf rotors between the base line and the fenced area, where spacing is tighter. But that's really the only area we use those."

ST: How much of a role does soil and turf type have in selecting and

installing heads and riser assemblies?

JB: "Soil plays the larger part. If it's a tight soil, we have to match precipitation rates with the growing medium's infiltration rate. We can't put on more water than the field can absorb. Native-soil fields need lower volume heads.

"Another consideration is sand-based fields. Sugar sands in Florida can 'stick-up' sprinkler heads. The sand grains get caught between the sprinkler's wiper seal and riser, so as the head goes up and down, the sand scores the riser and can get caught - leaving the head sticking up.



"If your sports field base is composed of rounded sand, it's like growing turf through BBs. The surface turns into a volleyball pit. Good sand-based fields use angular sand because it locks up and stays put. However, this can have a degrading value on the head. In a high sand environment, stainless steel heads protect against that.

"Generally, though, we look at using plastic sprinklers that flush on the up and down stroke. The high-density polyethylenes are pretty durable and equal or exceed the durability of old brass heads.

"For installs, we specify swing joints because they hold equipment more vertical. If large rotor heads aren't correctly compacted, when they throw 50-60 feet they are exerting that same pressure around the back of the heads. They begin to wobble and donuts form around the head, which create surface irregularities and player hazards."

DM: "Both play into it for sure. We want to utilize sprinklers that allow the turf manager to match the application rate to the infiltration rate of the field. Most of the manufacturers are making plastic-type sprinklers. They've gotten away from