

“AMENDING” INFIELDS ON A BUDGET

Editor’s note: *This article was written by former MLB groundskeeper Clayton Hubbs, now with Stabilizer Solutions, Inc., Phoenix, AZ.*

WHY SHOULD THE EAST ANAHEIM LITTLE LEAGUE MATTER TO YOU? The league’s field, once a treacherous battleground where bad hops usually led to bloody mouths, has now become a proving ground for professional baseball.

When the East Anaheim Little League came to Barney Lopas, head groundskeeper for the LA Angels of Anaheim for help on their field, it was a challenge to adapt a major league maintenance schedule to a field that lacked tools, budget and had a fluctuating base of volunteer manpower. Lopas, a concerned parent and coach, asked himself, “what can I focus on right now to make the biggest impact on this field within the league’s budget and volunteer help?”

Being that 70% of a baseball or softball game is played on the infield skin, Lopas decided to focus his efforts there. If a ground ball made it over the infield lip, player’s had to expect the unexpected with the unpredictable infield. The loose infield mix not only created dangerous hops, it made it difficult for the players to find stable footing. While the addition of moisture provided a somewhat better surface, too much moisture compromised the immediate game and the field’s usability for days.

Replacing the infield mix was definitely not within the league’s budget. Lopas realized that the one thing he could carry over from his major league field, and still stay within budget, was an infield amendment.

PARTICLE SIZE ANALYSIS IS A MUST

The first step in amending an infield is knowing where you stand right now. We have all heard the numbers, an infield mix should be 70% sand, and 30% evenly split between silt and clay. Without a true particle size analysis you may think you have plenty of clay content, but you may actually be playing on silt. Too much sand can usually be improved by adding more clay (depending on the parent material of the mix).

On the flip side, too much clay can generally be remedied by adding more sand. Too much silt to begin with, and you are better off starting with a new infield mix altogether. While silt is a necessary component of making a good infield work, too much of it can put you in a ‘no man’s land’ of poor drainage and no cohesion, similar to what Lopas had to deal with. Only extreme cases warrant adding silt.

This brings us back to the particle size analysis; if you don’t know the composition of your infield, you may be adding unnecessary silt, sand, or clay.

Of course a quality infield mix is the best starting point. Infield mixes vary by use and region; a major league mix is going to be closer to 60% sand and 40% silt and clay, with more of a focus on the clay. This type of infield will be difficult for a little league or heavy use municipality to maintain properly. These fields should be closer to the 70/30 range.

Many high school, municipality, and even college fields use soils that may be classified as “clay loam” and fit within the recommended particle size, but contain too much organic matter (broken down plant material like mulch). While organic matter is great for plants, it is bad for players.

Too much organic matter can loosen soil, impede lateral surface drainage, and disrupt the structure that hard soil particles provide to

support the player. The biggest problem with organic matter is that it breaks down and turns into silt. Many laboratories provide a separate organic matter content test, sometimes included with the particle size analysis. This test can provide you with valuable information that can help you plan ahead for future silt from organic matter breakdown.

Find an infield mix that derived from a good parent material, processed mechanically and produced specifically for baseball and softball to avoid high organic matter content. If you don’t have the luxury of purchasing a new infield mix, proceed with an infield amendment.

SELECTING AN AMENDMENT

The next step is to know your goal. The East Anaheim Little League’s main objective was player safety. A municipal field’s goal may be Return On Investment—maximize field use while reducing maintenance. A college may want to enhance home field advantage and get more practice time despite the elements.

While most desire all of these goals, really focusing on one or two motives will help in matching the right amendment with your existing soil conditions. Infield amendments should be used cautiously and for a specific reason, not just thrown onto an infield and expected to “do something.” If not used properly, they could end up doing more harm than good.

Infield amendments come in all shapes and sizes, but mainly fall under two categories: mineral and organic-based. If your goal is to increase drainage, beyond adding sand and risking a loose infield, mineral amendments such as gypsum and calcium carbonate can help you improve your infield’s natural drainage properties. Take care in applying these mineral amendments as over application can be a problem. Especially note that calcium carbonate should only be applied to high clay soils. Further soil tests, such as pH studies, should be done to determine the exact amount needed.

While vertical drainage is crucial for playability on an infield, most water should exit the infield via lateral drainage. The best way to improve lateral drainage is building a 1/2% slope into your field at the onset and maintaining a level field over time. Keeping a field level during a game is difficult, as low areas are bound to form and collect puddles.

Conditioners can be a good way to absorb puddles and continue play in rainy weather. The most popular conditioners are calcined or vitrified clay, mineral amendments made from fired clay particles that maintain a loose consistency and absorb water. Conditioners also work well as topdressings on higher clay infields. They provide the loose “cushion” needed to drag and slide on.

Conditioners work great for what they are designed to do, but Mark Razum of the Colorado Rockies warns, “infield conditioners are not a cure-all. Before adding them, you need to make sure your infield is level and your holes filled in with a good infield mix. I see it time and again, groundskeepers think they can just level their field with a topdressing, but the end result is like playing in a sand pit. When infield conditioners are substituted for good groundskeeping, they can turn against you.”

Organic infield amendments are used to increase safety and field usage. They are incorporated into the soil to help stabilize the infield



and improve cohesion and absorption. Good organic amendments will effectively bind soil particles to help turn loose, even unplayable infields into cohesive and stable footings. These products make silt particles act more like clay particles, which is a great defense against weather extremes.

The East Anaheim Little League actually approached Barney Lopas several years ago. Now Lopas has crafted a yearly maintenance program, which builds upon the progress from previous years. "Small incremental changes each year can lead up to equal the big immediate renovation," says Lopas. While the maintenance program focuses on new areas of development, like turf health and mound renovation, the importance of the infield amendment, Stabilizer®, is never forgotten. You don't need to add the same amount as the initial installation, but adding the recommended amount each year can ensure that you don't undermine the progress you've already made."

A recommended infield amendment pro-

gram should include ripping and tilling your fields once a year. Fines do sink to the bottom, which in a small amount can be a good thing. When fines sink, larger particles remain on top, providing the loose cushion or sliding surface. Too much sinking and your surface becomes too loose and drainage layers may form. The surface soil particles themselves can also become crushed from overuse, depending on the parent material of the infield mix. Also, soil particles weather and break down the same way that the Grand Canyon was formed: exposure to rain, snow, and sun. Ripping and tilling once a year evenly blends soil particles, brings fresh soil particles to the surface, and provides a good opportunity to level the infield by adding additional infield mix.

Adding infield mix once a year is a good idea, as the mix is washed into the grass, players pick up the mix on their cleats and groundskeepers throw infield mix away when picking up debris. Before tilling, amendments that are incorporated into the

soil such as mineral and organic amendments, should be spread at the recommended rates via drop spreader or topdresser. Tilling incorporates infield amendments evenly throughout the profile. Always beware of getting into your base material when you are tilling. After tilling, the infield should be leveled, preferably by a laser grader to achieve the 1/2% slope, watered, and rolled if necessary. This program should be performed more than once a year for fields that receive extremely heavy use. ■

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