

Digging In

The **Inside Scoop** On Rodeo Ground



WPRA

Good ground for barrel racing is good ground for rodeo.

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Let's Talk Dirt

Getting down to the nitty gritty on arena dirt.

By Laura Lambert

The question is, "What is dirt?" That seems almost too simple. To many people in the world, dirt is what is on the ground where there is an absence of hard top. To the rodeo world, it is a multi-faceted question with a lengthy complicated answer. From a landscape or agricultural standpoint, "dirt" is more properly referred to as soils in that it is intended to support the growth of plants. In other aspects where it is not intended to support plant growth, the soil is often referred to as "dirt" or ground.

Just as rodeo athletes and horses have evolved over the years into fine-tuned competitors, so has the process of preparing the dirt. In overview, the footing affects more than just the speed horse events. The bucking stock relies on stable footing to perform their best as well. The first step in being able to provide optimal footing for the majority of equine athletes and contestants begins with knowing what constitutes the footing in your arena. There are several means of determining the composition of your ground that we will cover in later issues but the main point is that you have to know what types of dirt you are working with.

The committee for The Pikes Peak Or Bust Rodeo in Colorado Springs made sure the ground was safe for all rodeo competitors.



Every arena varies and each has its own signature make-up of dirt. According to Safe Arena Footing (SAF), the more sand you have, you may need more frequent watering to work the ground and hold it together for competition. The more clay you have the more the ground may compact and possibly form a hardpan. You have to rip the hardpan. They go on to say that it doesn't only matter what it looks like on top, you also have to worry about what is 6-18 inches down. Sometimes the hardpan has to be

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Silt vs. Clay

SAF Committee with Laura Lambert

Soil is composed of three main mineral constituents: sand, silt, and clay. The difference between these constituents is primarily categorized as a function of particle size. Sand is the fraction from 0.05 to 2 mm, silt is from 0.002 to 0.05 mm, and clay is the material finer than 0.002 mm. Although defined by size, each of these constituents also normally exhibit differences in mineral type, physical, and mechanical characteristics. Sand is granular in nature and commonly quartz. Clay is plastic in nature and commonly montmorillonite or kaolinite. "Plastic" is a term referring to the characteristic of clay to be shapeable and formable. Silt is small in size but behaves more as a granular material than as a plastic material; often composed of quartz, feldspars, and micas. In that regard, when silt is combined with clay it essentially detracts from or decreases the plasticity of the clay component.

Many laymen commonly group silt and clay together as if they had the same characteristics but nothing could be further from the truth. In fact, when evaluating rodeo ground we might find a good footing material using a properly-graded sand with a pure-clay amendment (the soil constituent) comprising 10-15% of the total. If the soil constituent contains both silt and clay, similar performance characteristics may require 20-30% soil addition to the same sand.

One should also be aware that the term clay also refers to a soil texture in which there is significant amounts (>40%) of clay minerals but is not as pure-clay material. Silt and sand are also soil textures with a 'silt soil' being a soil with greater than 80% silt content and a 'sand soil' is one which contains greater than 85% sand.

trivia

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What are the 3 mineral constituents that make up soil? And which most influences the mechanical stability of your ground?

A

The 3 mineral constituents are sand, silt and clay. Sand, the amount and particle size distribution has the most influence on the mechanical stability of your ground. When properly graded, it provides for firm footing conditions and is less sensitive to moisture content than either the silt or the clay constituents.

Down & Dirty With The Pros

In this issue we talked with Chuck Dunn who is the owner of D&D Productions. Chuck has been in the business of manipulating ground since 1985 and has worked with the WPRA at the World Finals in Waco, Texas.



WPRA: What are the main things that an event producer can do to help provide safe and consistent ground at their rodeo?

times and in different directions, setting the ripper teeth shallower each time.

Chuck Dunn: I would say the biggest mistake that I have seen event producers make is that they only groom the top of the ground right before the event. While that may look pretty, there is much more that goes into making ground that is safe, consistent and fair for all competitors. I get access to an arena anywhere from 1 to 10 days before the event. I start by ripping the arena as deep as I can, to break up the hard pan underneath the cushion. It is important to work the ground multiple

Another critical factor impacting arena ground is the moisture content. The moisture in indoor arenas is much easier to monitor than in outdoor arenas because of building ventilation and weather factors. Overall I prefer to add water the day of an event to get the optimal moisture level. And a great test to see if you have good moisture content is to pick up some ground and make a fist. The dirt should clod easily, and when you bounce it around in your hand it should break apart easily.

Justin Best Footing Spotlight



Over 200 rodeo committees have benefited from Justin Best Footing Awards. Is your committee one of them?



We here at Hamel Rodeo strive to make ground conditions as consistent as possible. Weather of course is a big factor for our outdoor Rodeo. We also share our arena with tractor pulls, demo derby's and a county fair. Our "arena dirt" is stockpiled and put in place prior to the rodeo. The process involves putting down the dirt after our county fair and

packing it in place (to avoid ruts during the arena setup). After the arena is in place we are racing against the clock to work the ground for moisture level and consistency. No two years are the same, last year required a complete redo of the arena the morning of the first event (slack) to make the arena consistent due to rain and heavy trucks.

We accomplished the arena re-work in 2 hours which Margo, our Great Lakes director called a miracle. Money from

the Justin Best Footing Award along with money budgeted from our committee is used for our ground (either equipment or soil improvements). Once we became recognized for our ground efforts, we really focused on staying at the top and have worked hard always looking for consistent times in slack and our four performances. For 2016 we will be testing our dirt pile earlier and adding our sand with a new method to make things even better.

Ask The Expert — Brought To You By SPI Insurance

Question:

We prepare our ground 5 days before the rodeo starts. Then the stock contractor drives over it with trucks and equipment. Help!

Answer from Michael DePew:

Under these circumstances, I would do the ground prep in two stages.

1) Do your deeper rip and conditioning practices and then level and prep the ground nearly as you would for the event. Then use a float or roller to seal down the surface and get a surface compacted layer prior to the traffic from the stock contractor.

2) Once stock contractor is finished, rework the upper-cushion layer with harrow to the depth desired for the particular event/s.



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Committee Talk

With Anita Scott, Nacogdoches Pro Rodeo

“At Nacogdoches Pro Rodeo, like you we are always looking for ways to keep contestants wanting to come back to our rodeo” says Anita Scott. “So this year, we focused on making our rodeo the best ever from our ground in the arena all the way to the admission gate. We purchased a new 8’-4 set tractor disc and a water truck. With having the right equipment to help, we decided to contact Safe Arena Footing rep, Mr. Steve Thornton who is from Texas. Steve agreed to come down for a visit, to check our ground and go over some tips that he believes will help us be in tip top shape for our 2016 rodeo. We are also working with our local Extension Agent who advised us to utilize our local Ag Dept at Stephen F. Austin University to have our dirt tested. We are so excited about the upcoming Pro Rodeo and are always thankful for the support from the Nacogdoches Jaycees and the input from professionals, like the folks at Safe Arena Footing, our local Extension Agent and the Ag Dept. at Stephen F. Austin University.”



ANITA SCOTT



Components for SAFE & CONSISTENT Ground

Right amount of moisture



Right tools for preparation & maintenance



Right mix of dirt, sand and clay/silt



Digging In



Have additional questions? Want to get more information? Contact our partners!



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The WPROA is pleased to bring you these educational materials. Because the WPROA is primarily a sanctioning body, not a producer itself, it does not control the makeup or preparation of specific ground at specific events. Because safe ground is in everyone's interest, the WPROA encourages you to contact the individuals and entities above for more information.

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watered deep in order to get a good rip. Optimum composition is having the correct proportions of sand, silt, and clay and just as important is that the size distribution of the sand particles has to be correct.

To further understand this, you must know that there are actually three profiles of ground from top to bottom: Cushion, Pad, and Base. The cushion and pad are combined and referred to as the cushion profile and most often is composed of the same material and the base is called the compacted subgrade. The cushion composition should be high in sand with lesser parts of silt, clay, and organic matter. Each arena will have its own sand particle size distribution and shape. The ground may also contain appreciable amounts of carbonates, salt and sodium which can affect the performance of the ground. Each of these factors determines the method of optimal preparation. Of importance is that the entire cushion profile should be the same material composition and not vary from area to area or by depth. The base layer can be composed of many materials including a concrete floor in a stadium, a compacted native-soil subgrade, compacted clay layer, or a compacted gravel or stone layer.

Jim Brown from Tex-Sand Equestrian Services, LLC is a member of SAF. Brown works with every aspect of the equine surface industry to provide the most economical, optimal solution for your arena footing. After taking hundreds of samples from across the United States, he has developed methods for providing quality footing to arenas everywhere.

“Taking the proper first step, arena soil sampling/

evaluation (and water quality), a committee or producer can enter a technically sound path to first understand the existing conditions and how they may be remediated,” says Brown.

“We are affected most by the size, and shape of the particles that make up the sand, clay, silt, and how these components react to water. These are the main building blocks for a good surface, and with today's amendment market you can adjust your surface now easier than ever,” Brown went on to say.

“Sand is our biggest component in the cushion, next is clay, then silt, and the critical factor moisture. The requirements for each of the rodeo disciplines may vary slightly. While an arena can be fine-tuned for a specific discipline, the challenge is producing arena footing which is suitable for an entire rodeo, only varying in preparation techniques for each of the various events. The idea is to have a proper cushion material which will allow preparation techniques helping to firm, or soften, according to the stresses on the hoof for each event. Allowing the surface to respond properly to support the horse and the stresses he is applying to the ground provides consistent performance which affects the safety for the horse and rider,” Brown said.

“The ratios of these building blocks for the different events are the guidelines to establishing a more consistent surface from arena to arena, and from coast to coast. Commercial arenas should be, of course, held to higher standards and in order to have sanctioned events, the arena surface should meet basic specifications,” Brown concluded.