

# Soft water?



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## Questions?

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*We just got our practicefield in ground irrigation done this summer. I am wondering what your suggestion would be on how much and how often to water. Our grass is thin and worn in the high traffic areas and now the field has become quite hard. Our head coach would like to have it watered more to make it softer. What do you think about that idea?*

*Scott Danielson, assistant football coach, Lincoln HS, Washington, IA*

This question basically asks should a hard field be watered to make it softer. My first rule is to always take whatever immediate steps are necessary to please the coach and make the field safer and more playable. So my short answer is yes, on dry and hard fields moisture can be increased to improve cleat penetration and reduce surface hardness. Most native soils with more than 60% silt+clay by weight increase in hardness as they dry.

In contrast, sand fields are usually firmer when wet and can become overly loose and unstable as the soil surface dries. Like many native soil fields with high clay content, the field at Lincoln High School can be made softer in such a way that playing quality of the surface and player performance is improved. With that being said it is a real art to get the moisture just right on the entire field so that traction is maximized.

**This is another good example of why irrigation designers should carefully consider field use pattern when placing heads in a block**

Practice fields are anything but uniform. Worn areas with exposed soil in the center can quickly turn to mud while grass areas outside the hash marks are getting just the right amount of water. This is another good example of why irrigation designers should carefully consider field use pattern when placing heads in a block. Whenever possible block high use areas separate from low use areas to get better control whether it is for establishing grass seed or watering hard areas to make them more player-friendly.

The upper limit for preferred running, diving, and falling on soccer fields is 80 Nm as measured by a 1 pound Clegg Impact device and most fully grassed fields I experience are below this limit if turf is watered to prevent severe wilting. Excessively dry bare soil areas of a field can easily exceed this limit.

Cleat penetration is also an important part of field playability. When cleats don't fully penetrate hard surfaces players feel a sense of skating on top of the surface that results in timid running. Sufficient grass cover reduces this problem since cleats can grip into the surface mat of roots and shoots. When there is no grass one way to immediately increase cleat penetration is to water the field. Solid tine aerification can also be used during the playing season to reduce hardness caused by hard dry soils.

The trick with watering bare soils is to allow sufficient time for surface drainage or drying because wet soils are easier to compact. So watering to soften a field can be a double-edged sword; yes, it increases cleat penetration and makes the field softer; but it also makes it easier to compact soils that in the long run just make the field harder. If your watering program and play-

ing schedule result in smearing of the soil surface or mud collecting on players shoes, then you need to back off with the watering. It will take some trial and error because zones that water both grassed and bare soil areas will likely be either over- or under-watered to achieve the desired effect of growing grass or softening the field. Use heavier doses of water when you have time to let the field drain and dry, i.e., water heavy on Friday since play won't start until Monday.

Managing the bare soil areas of a football field is a lot like managing the skin on a baseball field; sometimes it takes a good soaking to maintain moisture deeper in the soil profile so that as the soil surface dries moisture actually moves upward through the profile to keep the surface moist, and in this case softer for better play. Hard dry soils without grass cover are difficult to rewet with small doses of water. Wetting agents can also help moisture penetrate tight soils and reduce runoff that ultimately reduces field hardness.

The most encouraging message received from Scott was that they now have a new dedicated watering system that allows them to control the moisture whether it is for growing grass or managing the hardness of the dirt. It also affords them the opportunity to start with a sand topdressing program because they now have irrigation. Without irrigation sand topdressing is not an option. So the short answer is yes irrigation can temporarily be used to reduce field hardness, but the more permanent fix is to use your new irrigation system along with sand topdressing, aerification, and repeated seeding to provide continuous turf cover that adds cushion to the field. ■