

# Just rolling along

**We have been** following your recommendations for coring and seeding and the stadium football field has greatly improved. It is late July and while the field is looking good I would like it to be smoother before the season starts. In addition to games, we will have a few practices starting in mid-August. Can we roll the field now to make it smoother?

Des Moines, Iowa

**R**olling turf always conjures up a bad image of soil compaction and why shouldn't it? Take a big heavy chunk of steel and smash whatever aberrations occur on the surface. After all, if you are going to smash the bumps in the field then the soil must compress somewhere. The truth is that many athletic field managers roll their field at certain times of the year and under certain circumstances with very good results and little demise to the field. To simply state that rolling is good or bad would dismiss all of the nuances that make rolling successful by a knowledgeable sports field manager. Let's review by example some of the successful and damaging circumstances of athletic field rolling.

All rollers are not created equal. It is important to consider the weight of the roller and the surface area that it contacts. Rollers made specifically for turf application generally weigh 300-1,000 lbs. and result in 3-7 lbs./sq.in. of pressure on the ground. These rollers have ground pressure that is comparable to the tire pressure caused by commonly used mowing, topdressing, and aerifying equipment. Moderate use of these lightweight rollers generally does not lead to excessive compaction as long as soils are not too wet. Rollers specifically designed for turf application have rounded edges to avoid gouging of the surface. They are typically used for light smoothing, grass striping, and rolling newly seeded or sodded areas. Larger construction rollers may be needed when lightweight rollers do not produce the desired smoothing effect.

Larger construction rollers with straight or sharp edges on the drum are often used to roll athletic fields. Care must be taken to avoid over-steering the roller and gouging the surface. Construction rollers can range from 1-6 tons. Large rollers with smooth edges can also be fabricated from sand filled propane tanks. All of these rollers can increase soil compaction and you should carefully consider the temporary benefit and the additional aerification that will be needed.

A one ton construction roller can be used to smooth worm casts, frost heaved ground, the transition between the grass and skin infield, and ruts and divots caused during wet games. As a general rule use the lightest roller possible to produce the desired result. As a general rule I try to avoid using rollers greater than one ton on native soils. Be careful not to use a roller larger than one ton just because a construction company donates it. Although it was well intended I have seen severe compaction in a single application using rollers greater than 2 tons. The vibration option on a construction roller can also lead to severe compaction.

In addition to roller size and weight, it is important to consider soil type and moisture. Wet soils compact easier than dry soils and clay soils compact more than sandy soils.

Here are some specific considerations for specific rolling situations:  
The coach wants the field rolled but you really don't want to add to the

compaction. Don't fight it. Just get your lightweight roller or even a heavier roller, wait until the field is dry but not wilting, and then roll the field. The grass will lay over and look smoother but you will have not effectively increased compaction because the dry soil is too stiff to compact. Essentially you change nothing but both you and the coach get what you want.

You have had a muddy game and there are foot ruts all over the field. If the field dries or freezes the hardened ruts will cause a dangerous surface. This is where you need to use your judgment. Even though rolling will compact the soft soil it is necessary in order to make the field playable for the next event. Allow the field to partially dry until the mud and free moisture have dissipated. The roller will crush the raised edges of the footprints without severely compacting the soil. A light vertical mowing can also be used to grind down the ridges on heavily foot-printed fields that have dried.

Remember that your primary job is to make the field playable and safe for the next event. If it requires smashing the moist surface flat then you may just have to bite the bullet and then use hollow coring within two weeks to open the surface again. This type of rolling is intended for extreme situations and should not become a routine practice since repeated rolling of wet surfaces will certainly lead to excessive compaction that may not be overcome by aerification.

Rolling should only be used to smooth a surface within the width of the roller. It is not a substitute for poor grading and will not level depressions or mounds that extend beyond the width of the roller. Coring, topdressing with sand or compost, and dragging are more suitable when trying to level depressions and mounds.

Baseball and softball fields require a smooth surface to avoid erratic ball movement. Infrequent heavy rolling and frequent light rolling may be necessary to smooth the surface. A one-ton roller will not remove "infield lips," however it can be used to routinely smooth the seam that develops between the grass and the infield skin.

Routine mowing with reel type mowers produces a smoother surface than rotary deck mowers. Rollers on reel units spreads the mower weight and provides light routine rolling of the surface.

The question specifically asked if the field could be rolled in July to prepare for the upcoming football season in August. Avoid rolling dry, dormant, or wilted turf since crushing the plants can cause severe turf injury that is similar to wheel tracking by mowers. Also, rolling during dry conditions seldom has any impact on smoothing the field. Rolling before the autumn football season is acceptable if the grass is actively growing, diseases such as *Pythium* and *Rhizoctonia* brown patch are not present, and if irrigation is available to recover the turf. If you do not have the capacity to aerify then you probably have no business rolling a field.

Rolling is often a necessary and effective means of improving the playing surface of athletic fields. Careful consideration should be given to soil type and moisture conditions as well as roller type and size. You or the coach must be able to justify the need for rolling based on the perceived result and the additional aerification that will be required to offset compaction. **ST**

**QUESTIONS?** Send them to Dave Minner at Iowa State University, 106 Horticulture Hall, Ames, IA 50011, or email [dminner@iastate.edu](mailto:dminner@iastate.edu). Or, send them to Grady Miller at the University of Florida, PO Box 110670, Gainesville, FL 32611, or email [gmliller@mail.ifas.ufl.edu](mailto:gmliller@mail.ifas.ufl.edu).