Soil prep and rolling: listen to honest Abe

We wanted to know what your opinion is on rolling athletic fields before sodding to help achieve a level playing surface? We primarily work with native soils, but also install sand-based fields. Our main concern is too much compaction before sodding when preparing the surface for native soil fields.

Landtek Group
Long Island, NY

Put me on a field or a construction job with any type of roller and it is a very easy call for me to assess the situation, observe the roller, and then decide if we should continue rolling under those conditions. Ask me to give advice without seeing the situation and my fingers freeze up.

But you did specifically ask about rolling native soil (assuming something with at least 60% silt-clay by weight) just before sodding. It sounds like you have been on construction jobs where the graded field just didn’t look smooth enough to meet your approval and you are wondering if the roller could help or hurt the situation. Hold that picture in your mind; we’ll be back after a brief lecture on rolling vs. grading.

Rolling is not a substitute for, or means of overcoming, poor grading. In other words you can’t smash the ground with a roller to change the contour or cause higher areas to be filled into low areas. That work needs a grader has smoothed loose dirt into a low spot. Even though a roller can be used for this we generally find several situations where I have tried rolling just to see if I can make the situation better.

Rolling can be used to compact soft spots where the grader has smoothed loose dirt into a low spot. Even though a roller can be used for this we generally find the vehicle tires and box blade on the laser grader are the best means of firming up the surface. Sometimes the roller is used in conjunction with the laser grader if we have a lot of soft spots. If we get lucky (not too wet and not too dry) the soil works just perfectly and after laser grading there is about a 1/4-inch of crumbly soil on top of a firm base.

Walking or driving on the surface with sod-laying equipment should only leave shallow tracks that are easily raked smooth with a landscape rake, drag, or ball field bunker rake. Here is where you should have a concern with rolling or grading before sodding. If the surface is left too hard then seed or new roots from soil will not develop because of surface compaction. Rolling when the soil is too wet will smash the clay particles together and cause a glazing of the surface; when dry the surface is crusty and seed sits on top of the surface rather than nestled down and slightly buried into the soil. Seed on top of the soil seldom germinates.

The surface should be prepared the same for seeding or sodding. Grading equipment can sometimes leave the soil surface very hard, especially where the cutting bar has planed a high spot. When rolling, grading, or equipment traffic causes a hard surface it must be scarified to loosen the hard surface before seeding or sodding. Working the soil when it is too wet usually causes hard and glazed surface conditions.

I always ask honest Abe Lincoln if my surface is ready for planting turfgrass. Stick a penny in the ground right side up or upside down. The loose soil should be somewhere in Lincoln’s ear if you are listening to his advice. If your budget won’t allow for the penny method then simply walk over the area to inspect the seed or sod bed. Areas that do not leave any footprints are probably too hard and need to be scarified. On the other hand, foot prints deeper than a half-inch indicates that the seed could be buried too deep or the ground may settle causing a low spot.

Just 2 weeks ago I had a local sports field builder laser grade a new native soil area at our turfgrass research facility. The soil conditions were just perfect for working the ground, slightly drier than moist, no soil stuck to the equipment, and there was just a hint of dust as the soil moved across the box blade. They had started by putting the teeth down on the box blade to loosen up the surface. Two hours later the 0.5% grade was perfect and the filled areas had been firmly by the process of laser grading and tire packing.

We probably could have seeded at that point but Mr. Lincoln would have been upset with about 15% of the area that was left too hard from the cutting of the grader bar. We wanted to get done that day, but we were just not happy with the hard areas, so the next morning we quickly built a nail drag and scratched up the entire surface and followed that with our screen drag. Now the surface was perfect, loose in the top 1/4-inch and firm.

So to answer your question on rolling before sodding I would say that rolling before sodding on a crumbly dry soil will probably not cause much compaction and could help firm up a surface that is too soft. Rolling that compacts moist soil will require some type of scarification before sodding. Aside from rolling, one of my favorite ways to firm up a surface and get all of the soft spots to settle is to give a light irrigation just until puddles begin to form. Each piece of ground works a little different depending on the moisture and soil type. It may take several cycles of grading, dragging, scarifying, and water settling to get the surface just right.

There is one thing for sure; patience is needed since conditions are not always right to work the soil. Rolling can be a helpful tool in the process of preparing ground, but it is not a substitute for proper grading or a means to flatten wet soils as final preparation for sodding.

Q&A

by Dr. Dave Minner, Ph.D.,
Associate professor, Iowa State University

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