Minimize soil compaction on the farm

Soil compaction is a problem that many producers face, but one they often overlook. Paying attention to the problem is important since soil compaction can reduce your forage yields and slow forage establishment. That can cost you a lot of money in the long run.

When soil particles are pressed together, it reduces pore space and aeration and damages the soil structure, which reduces the soil’s ability to retain moisture. You know what happens when soil can’t retain moisture—runoff and poor drainage.

Compacted soil also decreases organic matter, reduces microbial activity and increases erosion and nutrient leaching. All these things really affect plant growth and that’s why you end up with sparse or bare patches and low overall yields.

Soil compaction results from natural and operational factors. Severe compaction is almost always due to management practices. Wheel traffic is the main culprit. As farm equipment has become heavier and producers’ time has become more limited, machinery has become an even bigger contributor to compaction.

Tillage operations at the same depth, over time, can cause severe compaction to the layers below the tillage depth. Wet soils are most susceptible to compaction. Busy schedules make waiting for optimal soil moisture difficult. Hoof traffic can also cause compaction, especially near waterers, feeders and gates.

You can take some simple steps to prevent and reduce the severity of soil compaction. Knowing your soil type and soil properties can help you make management decisions. Soils higher in clay and...
low in organic matter have a greater potential for compaction. Focus on building organic matter in the soil to develop a good soil structure while you decrease soil bulk density.

If you can keep a thick stand of forages, you can increase manure distribution. Reducing tillage can build soil organic matter. Try to control and reduce wheel traffic, especially on wet soils.

Planting a tillage radish in severely compacted areas is another way to reduce compaction. This plant provides a thick ground cover, and its large tap roots can penetrate compacted soils. Be sure to plant a forage-type radish if you intend to graze the pasture. Many producers plant a forage radish with a mixture of annual ryegrass or cereal rye.

Consider installing high-traffic pads around waterers, feeders and gates. If you regularly move feeding areas, you can prevent any one area from becoming severely compacted.

For more information on preventing or reducing soil compaction, contact April Wilhoit, County Extension Agent for Agriculture & Natural Resources at the Fleming County Cooperative Extension Service. Your visit is always welcome or call at 606-845-4641 or email april.wilhoit@uky.edu or go to Facebook https://www.facebook.com/fleminganr  You may also visit https://grazer.ca.uky.edu/ for more resources on managing forages.

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